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SCALE FORMATION IN PRIMITIVE MUSIC

BY FRANCES DENSMORE

INTRODUCTION

IT is the purpose of this article to consider the subject of scale formation among primitive people by presenting certain observational data, grouped for convenience but not intended to prove any theory.

The statement is frequently made that primitive music is based on the pentatonic scale which comprises the first, second, third, fifth, and sixth tones of the diatonic octave ; this scale, however, represents an established musical basis and must have been preceded by an experimental period in which tones were used in smaller groups. What tones were these, and what interval relation did they bear to each other ? Was the initial tone a high tone, and if so what was the most common interval in the descending melody ? What was the most common interval relation between the first and last tones of the song ? These are some of the questions which present themselves to the student of primitive music : the answers must be based on actual musical performances of primitive people, and from the answers to these and similar questions may eventually be deduced some knowledge of the gradual formation of a musical scale.

In our consideration of this subject it is desirable that we concede music to be primarily a means of expression, spontaneous and intended solely for the satisfaction of the individual ; secondarily, or at the next stage of its development, a means of communication by which a mental concept is intentionally conveyed to another or other individuals ; and later, a cultivated art whose aim is to com-

bine the spontaneous element of the first phase, and the magnetic element of the second phase with a required technical skill and conformance to established canons.

Our first point of consideration must therefore be primitive music as a spontaneous means of expression.

Generally speaking, the instrumental music of this period is either a rhythmic pounding or the blowing of some instrument similar to a flute. Undeniably each of these has a direct bearing on our subject, but unfortunately the necessary data are not at hand for their analysis. Turning to the field of vocal musical expression we search for one or two features so commonly accepted as to form a safe basis for our study. The subject is so vast and its scientific analysis so new that our work at the present time can present only a portion of the truth, yet that presentation may lead the way to the ultimate establishment of fundamental facts.

For purpose of further analysis, let us note the predominance of the love song in all musical expression, next in volume being songs of grief, songs of the contemplation of nature, and songs of religious content.

During the Exposition at St Louis I studied the music of the uncivilized Filipino villages, comprising the Igorot, Negrito, Samal Moro, and Lanao Moro. Among all these tribes I found special emphasis upon the love song, and I even found one Mangyan, sole representative of his tribe, who said that his people sang only once and that was at courting time.[1]

The Hawaiian princess Kalanianaole recently told me that most of the old Hawaiian songs were love songs, next in number being the dirges.

A study of the music of the American Indian reveals a large number of love songs, but Indian music is neither so primitive as the Filipino nor so clear an entity as the Hawaiian. Each Indian tribe sings many songs learned from neighboring tribes, and it will be the labor of many years to collect sufficient songs of pure tribal culture to determine a relative number of love songs; but my observation among the Chippewa of Minnesota shows that these Indians

[1] The music of the Filipinos, *American Anthropologist*, n. s., vol. 8, no. 4, Oct.–Dec., 1906.

are extremely fond of their love songs, and that many of them are widely known and are said to be very old. Human nature is essentially the same in civilized and uncivilized environment, and the shelves of our music stores will be found to contain a large proportion of songs of love and grief, next in number being songs of religious content and songs concerning the contemplation of nature.

In Lord Monboddo's *Origin of Language* (vol. 1, p. 469) Dr Blacklock says: "The first language among men was music: before our ideas were expressed by articulate sounds they were communicated by tones varied according to different degrees of gravity and acuteness."

I quote the following from *Progress in Language*, by Otto Jesperson, Ph.D., of Copenhagen: "Thoughts were not the first things to press forward and crave for expression; emotions and instincts were much more powerful and more primitive."

Without entering further into proofs upon this point, let us accept an emotional origin for a portion of the musical expression of the race.

Our next question concerns the trend of the melodies which are the medium of this expression. Among several hundred Chippewa songs which I have recorded on the phonograph, I find the majority beginning on a high tone and ending on a low tone, the general trend of the melody being downward. This statement has been made concerning the music of other Indian tribes. I also found a descending trend in the *Amba* of the Negrito; this was the only accurately repeated melody which I heard in the Filipino villages.

We are therefore accepting, as a basis for our present study, the prominence of songs of love and grief, and the marked tendency of primitive music to begin on a high tone, the melodic trend being downward. We do not, of course, claim that this melodic trend is universal. Having accepted these two general statements, we naturally seek an explanation of them.

Our opinion concerning the origin of music depends on our opinion of silence. There is a silence which is vibrant, and there is a silence which is stagnant — not dormant nor containing latent power, but absolutely lifeless. Through this stagnant silence there passes a wave of mental impulse; this is repeated, it constitutes

itself a unit, the silence becomes vibrant, it becomes a medium of communication, and the mental impulse may, through this vibrant silence, be transmitted to minds which are sufficiently sensitive to receive it. From this intensity of vibration the song bursts forth, like lightning from a cloud. The intensity being reduced, the means of expression is changed to words of an extremely limited vocabulary; this is succeeded by an increased number of words until in profuseness of verbiage the more subtle means of communication are lost. The human race today is forgetting what silence is or can be. We are too noisy to know its possibilities. We seize the tools nearest at hand, and have too long depended upon words. The silent figures sitting motionless along the Ganges are monuments to the silence that died centuries ago.

But let us test our hypothesis inversely, keeping in mind that we are dealing with the expression of emotion, or, better, of mental action, and that this expression is being considered also as a means of communication. This inverse test is very simple, as human nature is the same everywhere. A shallow mental action, having, if you please, very slight vibration, finds its expression in a multitude of words. As intensity increases, the vocabulary decreases until very few words suffice. The next step is music as a means of expression, and we have the phrase that "thoughts can be expressed in music which can be expressed in no other way." Beyond this musical expression lies the vibrant silence in which neither words nor music are required as a means of communication.

Granted the vibrant silence through which, if we were sufficiently sensitive, we might communicate; granted a musical expression as its resultant, — what would be the tone which would spring forth? Would it not be the high tone which in all nature results from quick, strong vibrations? Do we not find here a possible explanation for the fact that many primitive songs begin on a high tone?

We must not forget our mysterious kinship with all that lives. Intensity of fear produces in bird and beast the high shrill cry, and intensity of distress produces the call for assistance. In all nature the love song and its prototype the love-call are intended to be far-reaching, and a tone low in vibration would not waken a response.

Before passing to the consideration of the melodic trend of

primitive emotional song, let us note the characteristics of certain Filipino love songs which I heard at St Louis.

In the Samal Moro villages the people sang for me by special arrangement; no suggestions were made as to the selection of songs, but at the close of the performance I was told that the songs were all love songs and that they were improvised, the ability to improvise these songs being the standard of musical proficiency. These songs were rhythmic, and suggested the natural environment of the people, without being in the least imitative. The songs of the Samal Moro contained the swaying cadence of the sea, which was entirely lacking in the songs of the Lanao Moro whose dwelling is inland. In a similar manner I found the songs of the mountain-dwelling Negrito to contain rippling cadences suggesting their environment with its bird notes and mountain streams. The rhythm of the Moro love songs was most interesting, yet it would have been impossible to divide these songs by the small metric unit of two, three, or four counts which we habitually use in our modern music. The rhythm of these songs resembled the rhythm of good prose which we feel but cannot analyze because the rhythmic unit is beyond our grasp. Possibly the reason may be similar in the two instances. Each writer of literary distinction has his own peculiar rhythm by which we may occasionally recognize his work and which is an important factor in our enjoyment of it, though we may not always be conscious of its presence. This rhythm may be said to consist of the writer's individuality combined with his mental environment — rugged and forceful or gentle and reposeful. Thus the rhythm of the Moro songs reflected the individuality of the person who could freely improvise them, and the natural surroundings in which the singer lived. May we go farther and say, not that the rhythm *reflects* the individuality, but that it *creates* the individuality? These are deep problems.

If we grant an emotional origin to a portion of the musical expression of the race, and admit that an emotion seeks a high tone as its initial expression, we must next consider the first interval in the melodic descent from that tone.

In my desire to learn whether there were anything in the anatomy of the vocal organs to determine this interval, I consulted

an eminent comparative anatomist who stated that he knew of nothing in the vocal anatomy of either man or animals to determine intervals of tone. I then consulted an eminent physicist, asking whether there were any mathematical ratios in the relaxing of tension which could reasonably be applied to the ratios of vibration in a descending musical interval. He replied that he knew of no such ratios. I record these inquiries simply to show lines of investigation. As has been stated, there is evidence that musical expression in primitive man is influenced by his natural environment, but this influence implies a subjective state as well as a somewhat developed melodic sense and musical proficiency. Our present inquiry is more rudimentary and seeks to learn what interval is intuitively selected by the voice in descending from the first high tone of a song.

Certain observational data upon this point will now be presented. These data are taken from the fields of uncivilized music, ancient folk music, and ancient ecclesiastical music, the latter two being permissible, since, by the term "primitive music" as used in this connection, we understand simply music which has not been changed to conform to modern standards.

I. Uncivilized Music

In his work entitled *Primitive Music*, Wallaschek makes the following statement (page 146): "Music in Nukahiwa, Washington Islands, does not go beyond the minor third from E to G, except that it sometimes sinks to D. The minor third is always preferred." Also (page 148): "In the songs of the Asaba [Niger] people, a preference for the minor third is noticeable."

During my study of primitive music at the St Louis Exposition I found the Igorot songs beginning on a tonic and usually passing to the sixth, either by the descent of a minor third or by the ascent of a major sixth. This submediant tone was strongly accented. The number of these instances was sufficient to entitle the occurrence to special consideration.

In my study of Chippewa music I have found the oldest and simplest songs characterized by the descending interval of the minor third. It will be noted that the sixth (submediant) forms a convenient intermediate tone between the octave and the fifth (domi-

nant), then follows the descent to the third (mediant), this, like the interval of descent from the octave to the sixth, being the interval of a minor third. I have found many songs containing the interval-outline 8–6, 5–3, 1: it will be readily seen that this comprises all the tones of the pentatonic major scale except the second, and also that its structure consists of two minor thirds and one major third. If sufficient data were available it might be safe to infer that this is the original framework of the pentatonic scale, the scale being thought downward, after the manner of the old Greek scales. This hypothesis, however, must await further evidence for its confirmation.

II. Ancient Folk Music

An eminent English authority has recently made the statement that the Irish folk music is the purest type now available for study, preserving most clearly its ancient characteristics. I therefore make the following citation from the field of Irish folk music. In *Ancient Music of Ireland*, by Bunting, published in Dublin in 1840, the author makes this statement: "The feature which in truth distinguishes all Irish melody . . . is not the negative omission (as of the fourth and seventh) but the very positive and emphatic presence of a particular tone, this tone being the sixth (submediant). This it is that stamps the true Scotic character (for we Irish are the original Scots) on every bar of the air in which it occurs."

This follows a statement that the Irish songs under consideration may or may not be on the pentatonic scale.

Importance is given to this very original position by the fact that Bunting is recognized as the greatest of Ireland's harpists. The records show that he was the leader of an assembly of harpists in 1799, more than forty years before the publication of this book, and his special study was the traditions of Ireland's ancient melodies.

III. Ancient Ecclesiastical Music

The Gregorian chant has preserved for us the ancient music of the Roman Church, which was founded on the musical forms established by the Greeks. Before analyzing the printed Gregorian music, let us recall our mental impression of it. If anyone sings a chant descending a minor third with an accent, we at once exclaim,

"That chant belongs to the Roman Church!" — in brief, the instinctive testimony of the ear is that an accented descent of a minor third is characteristic of Roman Church music, which is known to be either Gregorian or strongly influenced by the Gregorian.

Seeking authentic information on this point, I consulted a textbook of the Roman priesthood. The title of this work is *Magister Choralis, A Theoretical and Practical Manual of Gregorian Chant for the Use of Clergy, Seminarists, Organists, Choir Masters, Choristers, &c.* The book is by the Reverend Francis X. Haberl, Cathedral Choir Master, Ratisbon, Ireland, and was published at Ratisbon in 1877.

I make my first quotation from the instruction for the chanting of the prayers. It is important to note that this is a primary form of the chant representing the phase of music most nearly akin to metric speech. This is shown by the fact that no definite musical measure is given for the rhythm, it being clearly stated that this is governed by the mental concept in the mind of the priest.

The author gives three forms for the chanting of the prayers: The first has the compass of a minor third, most of the words being chanted on the upper tone; this chant begins on the upper tone, sometimes uses the intermediate tone in descending to the lowest, and always uses a long note for the lowest tone of the minor third. This feature of the printed music strongly suggests an accent on the lowest tone of the minor third. The second form of the chant is entirely on one tone. In the third form of the chant all the words are sung on one tone, except at the close, where the voice falls a minor third.

The intoning of the Gospel admits of three inflections — before a mark of interrogation, before a period, and at the termination. For the two latter inflections the voice falls a minor third, one inflection having an intermediate passing tone, the other having none.

In the order for the consecration of certain articles on Holy Thursday, I find that all the six intoned sentences end with a descent of a minor third to a long note; this long note would naturally receive an accent. All these instructions are concerning the chants which are sung by the priest.

I have also examined a large number of the Gregorian chants

used by the choirs of the Roman Church, but the descent of the minor third is less in evidence on the printed page than I expected. This fact recalls the statement of the Irish harpist in regard to his folk songs, that "it is not the frequent occurrence of the sixth (submediant) but its special emphasis which characterizes this music, the peculiarity being most evident in a descending progression." It appears that the same is true of Gregorian music.

In my study of Chippewa music at Red Lake, Minnesota, where the Indians are more primitive than on the other reservations, I listened for this accent as I heard the Indian singers at the drum hour after hour, and I found that they were unmistakably accenting each descent of a minor third.

The sounding consecutively of two tones a minor third apart invariably gives the impression of a minor key, especially if the lower tone be either prolonged or accented. To this may be attributed the apparent minor tonality of Gaelic music as well as of the music of the Roman Church and the songs of primitive peoples. The statement may, I think, be safely made that neither of these classes of music contains a preponderance of minor keys. When the minor key occurs, it is not, at least in the songs which I have analyzed, an accompaniment to sorrowful emotions. Wallaschek also states that the minor keys have no connection with melancholy in their use by primitive peoples.

I have not found, either in records or in my personal experience, a prominence given to any interval except the minor third. From this we might infer that the minor third, especially in descending progression, is the principal interval of musical intuition. Such an assumption would, however, seem to conflict with the theory that primitive melody is based on the overtones of a given tone, since the principal overtone, beyond the octave, is the twelfth (octave of the dominant), not the sixth (submediant).

Before attempting to reconcile these theories, let us outline our subject more broadly. We have thus far considered music largely in its relation to individual expression; probably this was its original form, but in humanity of very primitive culture we find three phases of musical expression — personal, social, and ceremonial. Is it not possible that these three may be of different melodic development?

Having considered at some length the first of these phases, let us pass to a consideration of the second.

IV. Social Music

Concerning the possible melodic development of social songs, I would refer to a paper by Dr W. Sabine, of Harvard University, entitled "Melody and the Origin of the Musical Scale," read before the meeting of the American Association for the Advancement of Science at Chicago in 1908. In it Dr Sabine reviewed the work of Dr Helmholz, dwelling particularly on the fact that overtones are more apparent to the ear when a tone or succession of tones is sounded within a small enclosure, and noting that the richer melodic expression is found among the races inhabiting small dwellings.

Thus if we trace personal music back to the high tense note of love or grief, descending through intervals psychologically determined, we may also trace social melody to a gathering of people in some small enclosure where the overtones of drum or voice were discernible and in time constituted material from which melodies were constructed. Extended evidence is lacking to prove that these tones were grouped in the order represented by the modern major or minor scales. The Greek modes are the oldest authentic groups; in these the tone material corresponded approximately to that of the modern major scale, but the portions selected were such that only one of the three modes was similar to our major scale in the succession of its intervals, and that mode, like the other Greek modes, was thought *downwards*, so that the leading quality of the seventh was lost, this being one of the chief characteristics of the modern scale. These three modes were developed later into a complete system of fifteen modes. From these, Bishop Ambrose, in the Fourth Century, selected four to be used in the music of the Roman Church: none of these corresponded to either our major or minor scale. From these four, Pope Gregory, in the Seventh Century, developed the eight Gregorian tones on which Roman Church music is still founded. In one of these the tone succession corresponds to our major scale of C, but the tonic is F, — none is like our minor scale. Thus we see that the existence of the proper tone material does not of necessity imply its use in the form of major or minor scales or keys.

I quote again from *Magister Choralis*, by the Reverend Francis Xavier Haberl (p. 236): "Modern modes close with the chord of the dominant leading into the chord of the tonic, not so the old modes. Modern modes have a leading or sensible note, in the old modes you would search for it in vain. In modern pieces of music the close of each period and of the entire piece must be with the chord of the tonic, in Gregorian modes this is not necessary."

Also from M. Danjou in *Revue de Musique* for December, 1847: "Nothing is more complicated, more difficult, or more uncertain than the attempt to assimilate modern harmony with ancient tonality." However, Dr Haberl devised some very simple organ accompaniments for Gregorian chants, prefacing his book as follows: "We caution the organist against the mistake of regarding the flats or sharps in the beginning of the stave as the signature of our modern keys . . . they are placed there to preserve the original positions of the semi-tones of the mode and not to indicate a key."

The object of this digression is to show certain facts concerning the earliest recorded scale formation which may assist our analysis of Indian and other primitive melodies, the principal fact being that man possessed the tone material of the major scale many centuries before he established its present succession of intervals as his standard of tonality. Some Indian songs are unmistakably in the major key; others contain the tones of a major key, but no feeling of its tonality. So the old Greeks had one major scale and two others in which the same tones were used in a different sequence. With these precedents we need not be surprised if the tonality of an Indian song does not correspond with its signature: for instance, if a song apparently in the key of D fails to accord with an accompaniment composed of the principal chords of that key, showing no preference for its dominant chord and no desire to close with the chord of A followed by the chord of D. Such instances are rare, but the tonality of Indian songs is so difficult and perplexing a problem as to admit an hypothesis.

Passing from the musical to a more general aspect of primitive social music, I suggest as one of its earliest forms the conversational music in which the words are improvised. This music among the Negritos and Igorot was described in my study of Filipino music.

Dr J. R. Swanton found among the Tlingit of Alaska an "Angry Song" in which two men waged a war of words along the lines of a familiar tune, the man being considered the best singer who could most freely express himself in this way. Wallaschek records similar songs among the Damaras of Africa and Indians on the Klamath river in Oregon.

Such use of improvised words to a remembered melody would naturally precede the use of remembered words and a more organized social music.

V. Ceremonial Music

Ceremonial music suggests a somewhat organized state of society in which a leader is appointed to express the thoughts of his followers. Among the Filipinos I found a phase of music in which the conversational form overlapped into ceremonial music; the song was similar to the Benedicite of the early Jewish Church, which is preserved to our own time.

A possible development of ceremonial music might be:

1st. Oral instruction or invocation.

2d. Metrical speech produced by prolonging certain words or syllables for effect.

3d. The chant, produced by changing from a modulated speaking tone to a singing tone.

The chant may be considered a characteristic form of ceremonial music: beyond this point the elements of social and personal musical expressions influence ceremonial music, producing hymns of personal or general import.

It seems reasonable to suppose that these three forms of musical expression may have existed when musical skill consisted chiefly in the ability to improvise. The development of music as an art is a different matter. Art is technic as well as beauty, and its expression must conform to certain established canons. Only in its highest expression is emotion allowed full sway. Music is still a means of expression, but it is governed by an intellectual mastery of underlying principles.

When the development of music as an art is begun, the experimental period of scale formation is ended.

Red Wing, Minnesota.

SOME KUTENAI LINGUISTIC MATERIAL

By ALEXANDER F. CHAMBERLAIN

OUTSIDE of the text of six brief songs published by the present writer in the *Report of the British Association for the Advancement of Science for 1892*,[1] and a Pater Noster printed (with not a few errors) by Father De Smet in his *Oregon Missions* (New York, 1847, p. 409) and reprinted by Bancroft in his *Native Races* (San Francisco, 1886, vol. III, p. 620), the literature of the Kutenai language is confined to the vocabularies of Hale, De Smet, Howse, Wilson, Tolmie and Dawson, and the grammatical sketches of Boas,[2] and Chamberlain.[3] The material given in this article is taken from the author's notes made in the field in 1891. It will demonstrate the characteristics of a language which, after prolonged investigation and comparison with other Indian tongues, must still be ranked as a distinct family of speech, a stock *sui generis*. The brief texts, with the exception of Nos. I and V, are portions of longer narrations. Besides these texts are given a number of sentences illustrative of some of the grammatical peculiarities of Kutenai.

I. A Brief Tale of Coyote and Grizzly Bear

(*a*) *Nāʟqō'' nē djā'is Skī'nkūts. Ō'pqanē ʟā'uʟās skā'sē. Kāʟwī'nē Skinkūts, "Ĭyā! gūtshā'ʟip." Kāk·ē'' nē Āqkō'kʟākō'wōm, "Māts ōnē'ʟin!" ʟpiʟ'nē ʟā'uʟās Skinkūts. Tā'qas.*

(*b*) Coyote was carrying his younger brother on his back ("packing" him). He saw Grizzly Bear coming. Coyote thought, "Ah! I shall die (*or* be killed)." Said Cricket, "Be not afraid!" Coyote killed Grizzly Bear. End.

[1] *Rep. Brit. Asso. Adv. Sci.*, Edinburgh Meeting, 1892, pp. 561–563. Also in *Eighth Rep. on N. W. Tribes of Canada* (London, 1892), pp. 17–19.

[2] Ibid., 1889, pp. 889–893, and *Fifth Rep. on N. W. Tribes of Canada* (London, 1889), pp. 93–97. Also *Rep. Brit. Asso. 1890*, pp. 693–715, and *Sixth Rep. on N. W. Tribes* (London, 1890), pp. 141–163 (vocabulary).

[3] *Rep. Brit. Asso. 1892*, pp. 589–614, and *Eighth Rep. on N. W. Tribes of Canada*, pp. 45–70.

II. Part of a Tale about Mosquito

(*a*) *Kānáqē G·āts'tsā'lā. Nū'pqanē sāk'lū'nāmisinē. Kā'kiLē'l'nē, "Lā'nē, ikē āqk·ē'"lmā'k." Kāk·ē'"nē G·āts'tsā'lā, "Hō'tsk·āikinē." Tsináqē G·āts'tsā'lā. Nū'pqanē sāk'lū'nāmisinē. Kā'kiLē'l'nē, "Lā'nē, hintshāLikinē sk·ō'mō." Kāk·ē'"nē G·āts'tsā'lā, "Hōtsk·āikinē." Tsináqē G·āts'tsā'lā. Kānáqē G·āts'tsā'lā. Nū'pqanē sāk'lū'nāmisinē. Kā'kiLē'l'nē, "Lāne, hintshāLikinē wā'n'mō." Kāquáqe G·āts'tsā'lā. Nikinē wā'n'mōs. Yū'nākā'psi nikinē. Wilwū'm'nē.*

(*b*) Mosquito was traveling. He saw a lot of houses. Somebody said, "Come, eat choke-cherries." Said Mosquito, "I don't eat (them)." Mosquito set off. He saw a lot of houses. Somebody said, "Come, you shall eat service-berries." Said Mosquito, "I don't eat (them)." Mosquito set off. Mosquito went along. He saw a lot of houses. Somebody said, "Come, you shall eat blood." Mosquito went there. He ate blood. He ate much blood. His belly swelled.

III. Part of a Tale of Coyote and the Woman

(*a*) *Kānáqē Skinkūts. aqkōwūkLē'ēt Yōquáqē. Nū'pqanē Pā'lkē. Tā'qas pā'lqē nū'pqanē Skinkūts. Nōnē'l'nē. Tā'qas nitqō'mēk. Tā'qas tsináqē Skinkūts. Nū'pqanē pā'lkēs nāk'k·ā'nē. Kālwī'nē kē'ēps. Kāk·ē'nē Skī'nkūts "Kāpsin siLēp. HōLtsē'kā'tē kāpsin siLēp." Tā'qas tsē'kā'tē. K·āō'pqanē kāpsin siLēp. Tā'qas tsináqē Skinkūts.*

(*b*) Coyote was traveling. He climbed up a mountain. He saw a Woman. The Woman saw Coyote. She was afraid. She lay down on her back. Coyote went off. He saw the Woman lying down. He thought that she was dead. Said Coyote, "Why is she dead?" "I will find out why she is dead." He examined (her). He did not find out why she was dead. Coyote went away.

IV. Part of Tale of Coyote and Chicken-hawk

(*a*) *Kānáqē Skinkūts āsmā'L'nē Ínlāk. Kāk·ē'nē Skinkūts, "HōLtsinaLā'nē kōiLnā'hāk ā'qkLtsEmā'kinēk itkinē natánik." Ō'smik Skinkūts Kāk·ē'nē, "Hōtshā'Linē natánik." Kāk·ē'nē Ínlāk, "Ō'smik kā'min." Kāk·ē'nē Skinkūts, "Wáqā." Tā'qas tsináqē. Kānáqē. Kāk·ē'nē Ínlāk, "HintshāLhōLpā'L'nā'pinē." Kāk·ē'nē Skinkūts, "Kāpsin!"*

(*b*) Coyote was traveling together with Chicken-hawk. Said Coyote, "Let us go away, far from here, people are making the sun." First Coyote said, "I shall be the sun." Said Chicken-hawk, "I first." Said Coyote, "No." They set off. They traveled. Said Chicken-hawk, "You shall honor me." Said Coyote, "What (why)?"

V. A Brief Tale of Coyote and Fox

(*a*) *Tsináqē Skinkūts. Nūpqanē Nā́k'yū. Kāk·ē'nē Skinkuts, "Hā́mātiktcū sitinis. Hōtstsināʟā'nē sūwū́timō." Tā́qas Kāk·ē'nē Skinkūts. Kāk·ē'nē Nā́k'yū, "qē. Hōtstsināʟā'nē sūwū́timō." Tsináqē. Kānáqē. Ōpqanē a̓́qkʟtsEmā́kinēk yūnōk·a̓'nē a̓́qkiʟā́is. Nāʟnūkūpkā'nē.*

(*b*) Coyote set out. He saw Fox. Said Coyote, "Give me your blanket. Let us go as friends." Coyote said (this). Said Fox, "Yes. Let us go as friends." They set out. They traveled. They saw people (and) many houses. They ran away.

Noteworthy is the use of a present instead of a past tense in these tales. It enlivens them as does the "historic present" in English.

These brief specimens will serve to indicate the general character of the language, its sentence structure, narrative style, etc. The morphological and grammatical peculiarities, facts relating to word-composition and the like will be found discussed in the following vocabulary including all words used in the texts here cited:

1. *Ā́qkiʟā́is.* Oblique case of *a̓́qkiʟā'nām*, 'house' (house of somebody). The radical is *ʟā*. The *-is* (or *-ēs*) is a termination for oblique cases of the noun; *-nām* is a suffix having about the force of the English indefinite article.
2. *Āqk·ṓkʟākṓwōm.* The word for 'cricket' resembles that for 'fly' (*a̓́qk·ōkṓwōm*), and both may contain the composition form of *a̓́qkōwōm*, 'belly.' Both begin also with *āqk-*, the most common of all noun prefixes in Kutenai. The Cricket appears in several tales as the 'younger brother' (*dyā́nām*) or 'friend' of the Coyote.
3. *Ā́qkʟtsEmā́kinēk.* This term for 'people,' 'Indians,' human beings,' contains the ethnic or locative suffix *-nēk* (or *nik*), which signifies 'dwelling at,' 'people of,' etc. It appears in *Āqk'ā́mnik*, 'people of *Āqk'ām*' (Ft Steele, B. C.); *Āqkisk·Enū́kinik*, 'people of the Columbia lakes,' etc.
4. *Āqkōwūkʟḗēt.* This word for 'mountain' contains the suffix *-ʟḗēt* occurring in several topographical terms, as, *a̓́qkinūkʟḗēt*, 'prairie,' etc., and perhaps also in *nāmʟḗēt*, 'echo,' *gōwiʟḗētinē*, 'it is far,' etc.
5. *Asmā́ʟ'nē.* This term for 'together' or 'in company,' of which another form is *nāsmā́ʟn'ē*, with prefixed *n-*, seems to be composed of *ās*, 'two,' the stem *mā́ʟ*, and the verbal *'nē* (or *-inē*). The stems *māʟ* and *ās* occur, apparently, in *k·'ā́smāʟ*, a term given by Dr Boas as signifying 'family' (all children included.)

6. *Djă'is.* The objective case (*-is* or *-ēs* marks the objective as well as the genitive and possessive) of *djă'nām*, 'younger brother,' and then in a more general way, 'friend.' The radical is *djā.*

7. *Gāts'tsă'LĀ.* This word for 'mosquito' seems to contain part of the word *āqk·ŏ'ktsāLĂ'nām*, 'end of nose,' the radical of which is (*ŏk*)*tsă'LĀ.*

8. *Gūtshă'Lip.* Composed of the radical *ip* or (*ĕp*), 'die,' 'dead,' *tshāL*, the sign of the future tense, further divisible into *ts* + *hāL*, and *gū*, pronoun of the first person in verbs.

9. *Hă'mātiktcū.* Second person singular of the present imperative (give!). *Hă'mātiktcū* seems to be used of things belonging to the one spoken to or under his control, in his hand, or upon his person. The *-ū* is suffix of the imperative (second person singular).

10. *HintshāLikinē.* Composed of *ikinē*, 'he eats'; *tshāL*, the sign of the future tense; and *hin*, pronoun of the second person singular, with verbs.

11. *HintshāLhŏ'LpāLnă'pinē.* A good example of Kutenai composition. Made up of *hŏLpāL*, the radical of *nŏLpă'L'nē*, 'he honors'; the verbal (*i*)*nē*; the verbal particle *-n-*; *tshāL*, the sign of the future tense; *hin*, the pronoun of the second person with verbs; *-āp-* the incorporated object-pronoun of the first person. The word is thus made up: *hin* + *tshāL* + *hŏLpāL* + *n* + *āp* + *inē.* This word seems to be really the term for 'to hear,' — *nŏLpāL'nē*, 'he hears,' 'listens to.'

12. *Hŏ'Ltsē'kătē.* This word consists of *tsē'kătē*, 'he looks at, examines, searches'; *hō*, pronoun of the first person singular with verbs; and the particle *L*, which seems to indicate the future tense or a desiderative form of the verb.

13. *HōLtsinaLĂ'nē.* 'We will go away' (or 'we will set out'). Future, or desiderative. Differs from *hŏtstsinăLĂ'nē* (q. v.) only in having *-L-* instead of *-ts.*

14. *Hŏ'tshāLinē.* Composed of the verb *inē*, 'is'; *tshāL*, the sign of the future tense; and *ho-*, pronoun of the first person singular with verbs.

15. *Hŏ'tsk·āikinē.* Composed of *ikinē*, 'he eats'; the negative particle *k·ā*; *ts-*, a sign, apparently of the desiderative; *hō-*, pronoun of the first person singular with verbs.

16. *HōtstsinăLĂ'nē.* 'We will go away' (or 'Let us go away'). A form of the future or desiderative. Composed of *hŏtsinăLĂ'nē*, 'we go away,' with *-ts-*, sign of future or desiderative. The word

hōtsinaʟā'nė is composed of *tsina*(*ǫē*), 'he goes away,' *hō-nā'ʟā*, 'we' (*hō* = 'I'), and the verbal *-nē*.

17. *Iʟnā'hāk*. This word contains a suffix relating it to a number of adverbs, etc., such as *pikāk*, 'long ago,' *hŏ'pāk*, 'first time, etc.

18. *Ínʟāk*. The male Chicken-hawk (*Accipiter Cooperi*) figures in several Kutenai tales and is an important mythological personage. He is the companion of the Coyote in some of his exploits, e. g., the search after an attempt to make the sun.

19. *Ipiʟ'nē*. 'He kills.' Composed of *ip*, the radical for 'die,' 'dead'; *-ʟ*, the particle making a transitive from an intransitive verb (as *ipinē*, 'he dies'; *ipiʟ'nē* 'he kills'); and the verbal *inē*.

20. *Itkinē*. 'He makes or does.' Probably 'he makes (or does) with the hand.' Composed of the radical *it*, 'do,' 'make'; the particle *-kin*, 'with the hand (or foot),' and the verbal *'nē*.

21. *Ĭyā*! This interjection has about the force of English ah! or oh!

22. *Kāk·ĕ'nē* (or *kāk·ĕinē*). 'He says,' 'he speaks.' Composed of the radical *k·ē*, 'speak,' 'say'; the verbal *'nē*; and the verbal particle *kā-*, seemingly belonging to the third person.

23. *Kā'k·ĭʟĕ'ʟ'nė*. 'Somebody speaks'; 'there is talking.' Contains the radical *k·ĭ* (or *k·ē*), 'speak,' 'talk'; the verbal particle *kā-*; the verbal *'nē*. The *ʟĕʟ* is another verbal particle, having perhaps a sort of passive sense.

24. *Kāʟwĭ'nē*. 'He thinks.' Composed of *ʟwĭ*, the radical of *ā'qki-ʟwĭ'nām*, 'heart'; the verbal particle *kā-*; the verbal *'nē*. The Indians located the mind, will, etc., in the heart. Hence *kāʟwĭ'nē* signifies 'he feels, believes, thinks, desires, wishes, wills,' etc.

25. *Kā'min*. The separable, independent pronoun of the first person singular. Not used with verbs, but only as indicated in the text.

26. *Kānáǫē*. 'He goes, travels,' etc. Composed of the radical seen in many words signifying 'to go,' 'to come,' etc., such as, *tsináǫē*, 'he goes off, sets out'; *ʟāǫáǫē*, 'he gets to, reaches'; *ʟātsináǫē*, 'he goes off'; *wātáǫē*, 'he crosses the mountains'; *wáǫē*, 'he comes'; *kāǫúaǫē*, 'he arrives'; and the verbal particle *kā·*. With this word *kānáǫē* begin many of the tales. *Kānáǫē Skinkuts*, "Coyote was going along," is as well known to the Kutenai as is to us "Once upon a time" in our own stories.

27. *K·āŏ'pǫanē*. 'He does not know, does not see, does not understand does not find out.' Composed of *ŏ'pǫanē*, 'he sees,' and the negative particle *k·ā*.

28. *Kā'psin*. 'What,' 'why,' Also used in the sense of 'goods,' 'property.'

29. *Kĕ'ĕps.* A composite verbal form of *ĕp* (or *ip*), 'dead,' 'die.'

30. *Kō.* 'Here.'

31. *Lā'ne.* Imperative second person singular, 'Come!' The verb "come," is irregular in conjugation. To *Lā'ne*, 'Come here!' corresponds the equally irregular verb *Lū'nū*, 'Go away!'

32. *Lā'uLā.* The Grizzly Bear appears often in tales and legends. He is sometimes deceived by the Coyote. *Lā'uLās* is the oblique case in *-s*.

33. *Māts.* Negative particle used with the imperative and not incorporated in verbs like *k·ā*. Employed in such phrases as, *Māts kāmin!* 'Not I'; *māts klō''nē*, *Lō''nē*, 'Not *klō''nē*, but *Lō''nē'*; *māts itkinin!* 'Don't do it!'

34. *Nāk'k·ā''nē.* 'She lies down.' The word is composed of the radical *āk'k·ā*, 'lie down,' the verbal prefix or affix *n-*, and the verbal *''nē*.

35. *Na'k'yū.* The Fox appears sometimes as the competitor of the Coyote and succeeds in tricking him at last. He also plays tricks on the Wolf.

36. *NāLnū'kūpk·ā''nē.* 'They run away' (or 'they run fast'). Composed of the stem *āLnū'kūpk·ā*, 'run,' the verbal affix *n-*, and the verbal *''nē*.

37. *NāLQō''nē.* 'He carries on his back.' Composed of the stem *āLQō*, 'carry on the back,' the verbal affix *n-*, and the verbal *''nē*. The stem *āLQō* is further divisible into *āL*, 'carry,' and the particle *Qō*, 'with (or on) the back'; and *āL* itself may be *ā*, 'go,' with the transitive suffix *L*, 'to carry' = 'to make go.'

38. *Natā'nik.* In Kutenai the sun (*natā'nik*) is regarded as a woman; the moon (*k'tsiLmiyit natā'nik*, 'night sun') is a man. The Coyote appears as sun-maker, also the Chicken-hawk. The word *natā'nik* is now applied to 'clock,' etc.

39. *Nikinē.* 'He eats.' Composed of the radical *ik*, 'eat,' the verbal affix *n-*, and the verbal *''nē*.

40. *NitQō'mēk.* 'Lies down on (her) back.' Composed of the stem *itQō*, 'do anything with the back,' the verbal affix *n-*, and the verbal suffix *-mēk*, of uncertain meaning. The stem *itQō* is separable into the radical *it*, 'do,' or 'make,' and the particle *Qō*, 'with (or on) the back.'

41. *Nōnĕ'L'nē* (or *nōniL'nē*). 'She is afraid.' Composed of the stem *ōnēL*, 'be afraid,' 'fear,' the verbal affix *n-*, and the verbal *''nē*. The stem *ōnēL* seems to be composite, containing a prefix *ō*, seen in

such other verbal stems as *ōmāts*, 'laugh,' *ōwas*, 'be hungry,' *ōwōk*, 'rise,' etc., and perhaps also *ōpQa*, 'see'; and a suffix *L*.

42. *Nū́pQanē*. 'He sees'; 'they see.' Composed of the stem *ōpQa*, 'see,' the verbal affix *n-*, and the verbal '*nē*. The word signifies both 'he knows' (or 'he understands') and 'he sees,' the Indians thus correlating knowledge and sight. The stem *ōpQa* is probably compound.

43. *Ōnilēn* (or *ōnḗLin*). The second person singular of the present imperative, 'Fear thou!' The ending *-ēn*, *-in*, *-in*, is common in the imperative of certain verbs, as *ikēn*, 'Eat thou!' *ōwṓkēn*, 'Get up!' The radical or stem of the verb is usually seen in the form of the imperative, as, e. g., *ik*, 'eat'; *ōwōk*, 'rise'; *ōnṓL*, 'fear.' See *nōnḗL'nē*.

44. *ŌpQánē* (or *ū́pQanē*). Differs from *nū́pQanē* (q. v.) only in possessing the verbal particle *n-*.

45. *Ṓsmik* (or *ṓsmēk*). Ordinal numeral adverb, 'first,' 'in the first place.'

46. *Pā́Lkē*. 'Woman.' Also used in the sense of 'wife.' The indefinite form *pāLkḗnām* is still in use among the Lower Kutenai, but has been sometimes obsolete with the Upper Kutenai. *Pā́Lkēs* is the oblique case in *(ē)s*.

47. *Qē*. 'Yes.' The general affirmative adverb, opposed to *wáQā*, 'no.'

48. *Sāk'Lū́nāmisinē*. 'There is a village' (or 'there are many houses'). The word seems to contain, besides the stem of *ā́qk'Lū́nām*, 'village,' a verbal prefix *s-*, the verbal *inē*, etc.

49. *SiLēp*. Composed of the radical *ēp*, 'dead, death, die,' and the modifying particle *siL*, of uncertain meaning (perhaps = 'very').

50. *Sitinis*. 'Thy blanket.' The radical *sit* (or *sēt*, *sīt*), 'blanket,' with the possessive suffix of the second person singular, *-(i)nis*. The word *sit* is Upper Kutenai, the corresponding Lower Kutenai term being *Lā́māL*.

51. *Skásē* (or *skásī*). This word seems to be a sort of infinitive or participle corresponding to *skáQē*, 'he comes.' The radical of the word is seen also in *wáQē*, 'he comes,' *LāwáQē*, 'he returns,' etc. The *sk-* is probably a determinative verbal prefix, as, e. g., is *w-* in *wáQē*. See *KānáQē*.

52. *Skinkūts*. The Coyote is the chief figure is Kutenai mythology. He is the hero of many exploits and adventures, being partly culture-hero and partly trickster. He appears as sun-maker, etc.

53. *Sk·ṓmō*. The berry of the service-bush (*Amelanchier alnifolia*),

known as *sk·ōmō'wōk-*, the *-wōk* = 'bush,' 'shrub,' 'woody substance.' Service-berries are much used as food by the Kutenai.

54. *Sūwū'timō* (or *sōwitimō*). 'Friends' or 'as friends.' This word seems to be derivative of *sūwō'nām*, 'friend,' with a suffix *-timō*.

55. *Tā'ɋas*. This word, which is a common ending for tales and legends (*finis* of the Kutenai), signifies 'enough,' 'sufficient,' 'ended,' 'the place for stopping,' etc. It is also in use as a particle, indicating past or completed action in the verb. The regular verbal sign of the past tense, *mā-*, is rarely employed in the tales and legends.

56. *Tsē'kātē*. 'He searches,' 'looks into,' 'examines,' etc.

57. *Wā'n'mō*. The word for 'blood' is one of the few terms for bodily organs, etc., which takes neither the common prefix *āqk-* nor the indefinite suffix *-nām*. *Wān'mōs* is the oblique case in *-s*.

58. *WāɋQā*. 'No.' The general negative adverb, opposed to *ɋē*, 'yes.'

59. *WiLwū'm'nē*. 'His belly becomes large.' Composed of *wūm*, radical of *ā'qkōwōm* (or *ā'qkōwū'm*), 'belly,' the radical *wiL*, 'large,' and the verbal *'ne*.

60. *YōɋQuáɋē*. 'Reaches the top, climbs up.' Composed of the particle *yō* (or *yū*), 'up,' 'on top,' and the verb seen in *kāɋQuáɋē*, 'he overtakes'—one form of composition with the radical *ā* (or *a*), 'go.' See *kānáɋe*.

61. *Yū'nōk·ā''nē*. '(There are) many.' One component of this word is the particle *yū*, 'up, on top' (cf. 'heap,' in English) and the last is the verbal *'nē*. This is an Upper Kutenai word, the corresponding Lower Kutenai term being *wā'iyē'nē*.

62. *Yū'nōkā'psī*. 'Many.' Differs from *yū'nōk·ā'nē* in termination only, the last component being the suffix *-sī* or *-sē*.

As further illustrating the general character of the Kutenai language the following sentences are given:

1. *LLā''nē k·ū'tsāts*. The chipmunk cries (weeps).
2. *Sā'nē skinkūts*. The coyote is bad.
3. *Sū'kinē f itk'āt*. The man is good.
4. *Sū'kinē nātā'nik inLāk*. The chicken-hawk is (i. e., makes) a good sun.
5. *Sā'niLwi'nē skinkūts*. The coyote is angry.
6. *Kānáɋē ɋāstáiyā*. The skunk is traveling.
7. *Ikū'L'nē skinkūts*. The coyote drinks.
8. *Kā'usāk·ā'inē inLāk ā'qkī tiLnāmō'is*. The chicken-hawk and his wife are stopping.

9. *Lítāk·atē'inē gi'ānūqLū'm'nā.* The rabbit is a poor hunter.
10. *Ípinē k·ū'tsāts.* The chipmunk is dead.
11. *Nā'kōwiL'nē skinkuts ā'qkī k'ū'pi.* The coyote and the owl dance.
12. *K'ā'pē nip'kō Litk·ā'tinē.* All black bears have no tails.
13. *Nā'Lk·atē'inē nip'kō.* The black bear picks berries.
14. *Kānmē'yits tsQāLzwáQē ā'qkink·ō'k·ō yāktsō'mēL.* Tomorrow the steamer (fire-canoe) will come.
15. *Kin sā'niLqō'inē?* Are you sick?
16. *Nīnē sūyā'pī.* It is a white man.
17. *Ā'qkitsLā'in nā'tskālā'kinē.* The tree has large branches.
18. *WīLk·ā'inē Lkā'mū.* The child is large.
19. *Hōnū'pQanē nā'usānmēyitkē Pōl.* I see Paul today.
20. *IpiL'nē kā'k·ēn nē'is mitskā'kās.* The wolf killed him the tomtit.
21. *NāLQō'nē djā'is skinkūts.* The coyote carries on his back his younger brother.
22. *PisQō'nē yitskimī'is.* He drops his pail.
23. *Nōnēl'nē Lā'uLās.* He fears the grizzly bear.
24. *Sā'kiLālk·ātē'inē tiLnāmō'is inLāk sk·ōmō'is.* The wife of the chicken-hawk picks service-berries.
25. *NāLQō'nē nā'hēks.* He carries on his back a basket.
26. *Ipil'nē nē'is náQanēs.* He kills him the caribou.
27. *Tcūkwā'tē nē'is Lā'uLās.* He seizes him the grizzly.
28. *Kānmē'yets wī'Lnams mitQanē Lūk'pūs.* The next day early he shoots the buffalo-cow.
29. *Hō'k·āikīnē sinā.* I do not eat beaver.
30. *Wā'LQuā mā'kōū'pQanis.* Yesterday I saw you.
31. *K·ā'ōniL'nē k'ā'pēs k'ā'psin.* He is not afraid of anything.
32. *Piskinē k'ā'pēs ā'qkōkLā'ntēs.* He throws off all his clothes.
33. *Kāk·ē'inē skinkūts mā'kū'tsLā'keL kū'swō.* Says the coyote: 'I loved my friend.'
34. *Kāk·ē'inē Lā'uLā k·āinē sinā.* Says the grizzly bear: 'It is not the beaver.'
35. *Kāk·ē'inē skinkūts ninē sinā.* Says the coyote: 'It is the beaver.'
36. *Kāk·ē'inē skinkūts inē sinā āqkōtāLs.* Says the coyote: 'It is beaver grease.'
37. *Kāk·ē'inē skinkūts hā'mātiktcū sitinis.* Says the coyote: 'Give me your blanket.'
38. *Kāk·ēinē náik'yū Qē.* Says the fox: 'Yes.'
39. *Lāitqanō kāk·ē'inē skinkūts.* 'Bite me again!' says the coyote.
40. *Kāk·ē'inē piskinēn. Piskinē.* He says: 'Let go!' He lets go.

41. *Kāk·ĕ́inē skinkūts hŏ́tsQāLínē nātā́nik.* Says the coyote: 'I am going to be the sun.'
42. *Kāk·ĕ́inē skinkūts k'ā́psin.* Says the coyote: 'What?'
43. *Kāk·ĕ́inē hōninē skinkūts.* He says: 'I am the coyote.'
44. *Kāk·ĕ́inē k·ū́tsāts pí'kāks ípinē kā́mā.* Says the chipmunk: 'My mother is dead long ago.'
45. *Kāk·ĕ́inē inLāk hōLpā́'LnŪ.* Says the chicken-hawk: 'Hear me!'
46. *Kāk·ĕ́inē skinkūts hŏtshā́'Línē Lkā́mū.* Says the coyote: 'I will be a child'
47. *Kāk·ĕ́inē inLāk hintshāLhŏ́'LpāLnā́pinē.* Says the chicken-hawk: 'You will honor me.'
48. *Kāk·ĕ́inē ā́qkLtsQemā́kinēk sā'nē skinkūts.* The Indians say: 'The coyote is bad.'
49. *Kāk·ĕ́inē hŏ́nipiL'nē k'ū́pi.* He says: 'I kill the owl.'
50. *Kāk·ĕ́inē kā́k·ēn hŏ́nipiL'nē náQanēs.* Says the wolf: 'I kill the caribou.'

The following vocabulary to these sentences includes words not appearing in the texts cited above.

1. *Ā́'qkī.* 'And.' Conjunction used in about the same way as English 'and,' 'also,' in such constructions as *Skinkūts ā́'qkī LÁ'uLā*, 'Coyote and Grizzly Bear,' "*kā́min*" *ā́'qkī* "*ninkō*," 'I and you'; *ā́'qkī ninkō*, 'you too.'
2. *Ā́'qkink·ŏ́k·ō.* 'Fire.' The radical is *k·ōk·ō*. The word contains besides the general prefix *āq(k)* and the determinative particle *kin*.
3. *Ā́'qkitsLā́'in.* 'Tree.' The stem *itsLā́'in* seems to be composite. The particle *its* appears in *ā́'qkitsk·ā́'L*, 'bark,' *ā́'qkitsk·ā́'Lāk*, 'branch,' etc. The essential radical of the word is *LÁ'in*, with the prefix *āqk-*.
4. *Ā́'qkōkLā́'ntēs.* Oblique case in *ēs* of *āqkŏ́kLā'nt.* The stem is *ōkLā'nt*, the essential radical, perhaps, *LÁ'nt*, with the prefix *āqk-* and *ōk* as modifying or determinative particle.
5. *Ā́'qk·ŏ́tāL.* 'Grease, fat, suet.' *Āqkŏ́taLs* is the oblique case in *-s*.
6. *Gīānūqlū́'m'nā.* The chief components of this word for 'rabbit' are the radical of *kāmnū́'qlū*, 'white,' and *gīā-*, a prefix appearing in a number of animal names, such as *gīā́'kqō*, 'fish'; *gīā́'kLā*, 'duck'; *gī'ānū́'kqō*, 'mountain-goat,' etc.
7. *Hŏ́'k·āikinē.* 'I do not eat.' Composed of *ikinē*, 'he eats,' *k·ā*, 'not,' and *hō-*, pronoun of the first personal singular with verbs.
8. *HōLpā́'LnŪ.* Second person singular present imperative, 'hear thou (me),' 'listen to (me).'

9. *Hōninē.* 'I am.' From *inē*, 'he is,' and *hō-*, 'I.' See *inē*.
10. *Hŏ'nipiL'nē.* 'I kill.' From *nipiL'nē*, 'he kills,' and *hō-*, 'I.' See *ipiL'nē*.
11. *Hōnŭ'pQanē.* 'I see.' From *nŭ'pQanē*, 'he sees,' and *hō-*, 'I.' See *nŭ'pQanē*.
12. *Ikŭ'L'nē.* 'He drinks.' It would seem as if this meant literally 'he eats water.' From the radicals *ik* (or *ēk*) 'eat,' *wŭ'ŭ*, 'water,' the transitive particle *L*, and the verbal *'nē*.
13. *ĪLă'nē.* 'He cries, weeps.' From the radical *iLă* (or *ēLă*), 'weep, cry,' and the verbal *'nē*.
14. *Ínē.* 'He is.' The intransitive verb 'to be' in Kutenai is *i* (or *ı*), to which is attached the general verbal ending *'nē*.
15. *Ípinē.* 'He is dead, dies.' From the radical *ip* (or *ēp*), 'dead, die,' and the intransitive verb *inē*.
16. *ĺtQanō.* 'Bite me.' Second person singular present imperative of *itQanē* ('he bites'). The *-ō* (or *-ū*) is suffix of this mood and person in certain verbs. The stem *itQa(n)* really signifies 'to do something with the teeth,' from the radical *it*, 'to do,' and *Qa(n)*, 'with the teeth.'
17. *K'·āinē.* 'He is not,' 'it is not.' From *inē*, 'he is', and *K'·ā*, 'not.'
18. *Kă'K'·ēn.* The 'Timber-wolf,' who often has tricks played upon him by the Coyote.
19. *Kămā.* 'My mother.' From the radical of *mă'nām*, 'mother,' with *ka-*, possessive prefix of the first person singular.
20. *Kanmĕ'yits.* 'To-morrow.' The *-s* is an inflectional suffix. The *mĕyit* appears in several other words, such as *ă'qkanmĕ'yit*, 'every day'; *ă'tsiLmĕ'yit*, 'night'; *ă'qKiLmĕyit*, 'sky.'
21. *K'·ă'ōniL'nē.* 'He is not afraid of,' 'he does not fear.' From *ōniL'nē*, 'he fears,' and *k'·ā*, 'not.'
22. *K'ă'pē.* 'All,' 'every.' *K'ă'pēs* is the oblique case. *K'ă'pē k'āpsin*, 'everything.'
23. *Kă'usāk'·ă'nē.* 'He (it) is, stops, remains.' From *sāk'·ă'nē*, 'stays, remains,' and the verbal prefix *kā-*.
24. *Kin.* 'Thou.' Interrogative pronoun of the second person singular. Used in such sentences and phrases as *Kininē Kitōnă'qā*,' 'Are you a Kutenai?' *Nă'qk'·ān kininē kă'K'·ēn*, 'Perhaps you are a wolf'; *Kintshāl'ēk*,' 'Do you want to eat?' *Kin ă'kōwiL?* 'Do you dance?'
25. *K'ŭ'pi.* The Owl serves as a sort of bogy for children among the Kutenai. When children cry or are very naughty their parents will

say to them, *Māts ēʟā'n, tshāʟʟtcū'kwātisinē k'ūpt!* 'Don't cry, (or) the owl will carry you off!' The cry of the owl is said to be *kātskā'kiʟ pā'ʟkē* or *ktsiʟkiniʟ pā'ʟkē*, the first of which signifies 'Charcoal woman.' The owl is a child-stealer, carrying children off in a basket on her back.

26. *Kū's'wō.* 'My friend.' From the radical of *sūwō'nām*, 'friend,' with *kū-* or *kō-*, the possessive prefix of the first person singular. *Kū's'wō* is syncopated for *kū'sūwō.*

27. *K·ū'tsāts* (or *g·ō'tsāts*). 'Chipmunk.'

28. *Litā'k·ātē'inē.* 'He hunts poorly, is a poor hunter.' From *ā'k·ātē'inē*, 'he is strong,' and the privative particle *ʟit*, 'without, minus.' Apparently 'he is weak.'

29. *Litk·ā'tinē.* 'He has no tail.' From the radical of *āqk·ā'tɛnām*, 'tail of an animal,' the verbal *ine*, and the privative particle *ʟit.*

30. *ʟkā'mū.* 'Child, young child.' The same termination appears in *tiʟnā'mō*, 'old woman,' etc.

31. *ʟū'k'pū.* 'Female buffalo.' The name of the buffalo-bull is *niʟtsik.*

32. *Mā'kōū'pQanis.* 'I saw thee.' Composed of *ū'pqanē*, 'he sees'; *mā-*, sign of past tense; *kō*, incorporative pronoun of first person singular; *-nis*, objective pronoun of second person singular.

33. *Mā'kūtsʟā'kēʟ.* 'I loved him.' From the radical of *tsʟā'kē'ʟ'ne*, 'he loves,' with *mā-*, sign of past tense, and *kō*, incorporative pronoun of first person singular, 'I.'

34. *MitQanē.* 'He shoots.' Used now of gun as of bow and arrow. The midnight dance at Christmas, what is left of an old hunting-season ceremonial, is called *mitQāʟtiʟkēʟ.* The hammer of a gun is *kāmitQāʟtitɛmōʟ*, 'the instrument by which shooting is done.'

35. *Mitskā'kas.* In Kutenai mythology the Tomtit is the grandson of the Frog. He kills the caribou, but is killed by the wolf.

36. *Nā'hēk.* 'Vessel, or basket, of birch-bark,' 'kettle.' *Nā'hēks*, or *nāhē'kis*, is the oblique case in *-s*, *-is* or *-ēs.*

37. *Nā'k·ōwiʟ'nē.* 'He dances, they dance.' From the stem *akōwiʟ*, 'dance,' with the verbal prefix *n-*, and the verbal *-nē.* The word for 'dancing' or 'the dance' is *n·ā'k·ōwīʟnām.*

38. *Nā'ʟk·atē'inē.* 'He picks berries.' From the stem *āʟk ātē*, 'pick,' with the verbal prefix *n-* and the verbal *'nē.*

39. *NáQanē.* 'Caribou.' The Caribou appears in several tales with the Coyote and the Wolf.

40. *Nā'tsk·āʟā'kinē.* 'Is (large) branched,' or 'has (many) branches. From *ā'qkitsk·ā'ʟāk*, 'branch,' with the verbal prefix *n-* and the intransitive *inē.*

41. *Nă'usānmēyitkē* (or *nă'hōsānmēyitkē*). 'To-day.' One chief component of this word is *-mĕ'yit*, which occurs in *ă'qkiʟmēyit*, 'sky,' *k'tsiʟmĕ'yit*, 'night,' etc. The first part may be *nā*, 'here.'
42. *Nĕ'is*. 'Him.' The oblique case, in *-is*, of *nē*, the personal pronoun, 'he.'
43. *Nīnē*. 'He is.' Differs from *inē* (q. v.) in having the verbal prefix *n-*.
44. *Nip'kō*. 'Black bear.' The Black Bear figures in the "Jonah-legend" of the Kutenai. The special name for the he-bear is *k'ă'pētēt*.
45. *Pikāks*. 'Long ago, long since.' The *-s* is inflectional suffix. *Pēkāk* or *pĕ'kāk* has the suffix *-āk*, seen in several adverbs.
46. *Piskinē*. 'He lets go, throws away, thrusts away, kicks away.' Literally 'he puts away with the hand (or foot);' from a radical *pis-*, the particle *kin*, 'with the hand (or foot),' and the verbal *'nē*.
47. *Piskinēn*. 'Let go.' The second person singular present imperative of *piskinē* (q. v.). The *-(ē)n* is imperative ending.
48. *Pisqō'nē*. 'He drops, throws off his back.' From a radical *pis*, with the particle *qō*, 'with the back,' and the verbal *'nē*.
49. *Qāstáiya*. 'Skunk.' This is a Lower Kutenai word, the corresponding Upper Kutenai word being *qă'qas*, of which the first part of the Lower Kutenai term is probably a syncopation.
50. *Să'kiʟă'ʟkatĕ'inē*. 'She picks berries.' The chief component is *aʟk·ă'tē*, 'pick berries.' See *nă'ʟk·atĕ'inē*.
51. *Să'niʟqō'inē*. 'He is sick.' Composed of the radical *iʟqō*, 'body,' *sān* (or *să'hān*), 'bad,' and the intransitive *inē*. Literally 'bad-bodied is he.'
52. *Să'niʟwi'nē*. 'He is angry.' Literally 'bad-hearted (or bad minded) is he.' From the radical of *ă'qkiʟwi'nām*, 'heart, mind,' *sān*, 'bad,' and the intransitive, *inē*. See *kāʟwi'nē*.
53. *Să''nē* (or *să'hānē*). 'He is bad.' From *sān* (or *să'han*), 'bad,' and the intransitive *inē*.
54. *Sinā*. 'Beaver.' Beaver-grease was a great dainty and is frequently mentioned in the tales. Beaver appears in a tale with Turtle, who tricks him.
55. *Sū'kinē*. 'He is good.' From the radical *sūk*, 'good,' and the intransitive *inē*.
56. *Sūyă'pi*. 'White man.' Possibly a borrowed term (cf. Nez Percé *suĕapo*). Another word for 'white man' used in the tales is *nūʟū'kinē*, i. e., 'stranger.' In the Kutenai tales the white man is often the butt of wit and sarcasm.

57. *Tcūkwā'tē.* 'He seizes, takes hold of, gets, fetches.'

58. *TĭLnā'mō.* 'Old woman.' Used also (cf. our own English) in the sense of 'wife.' The final suffix seems to occur in *LkĀ'mū*, 'child,' and some other words.

59. *T'itk'āt.* 'Man.' Also used in the sense of 'husband.' This is the Upper Kutenai form, the Lower Kutenai preferring *t'itk'ā'tENām.*

60. *TshāLwáQē.* 'It will come.' Composed of *wáQē*, 'it comes,' with *tshāL*, the sign of the future tense.

61. *Wā'LQuā.* 'Yesterday.'

62. *WĭLk·ā'inē.* 'He (or it) is big, large, tall.' From the radical *wiL*, 'large,' with the suffix *-k·a*, which appears in several adjectives; and the intransitive *inē*.

63. *WiLnām.* 'Early.' The first component is possibly the radical *wiL*, 'large, big.'

64. *Yāktsō'mēL.* 'Canoe, boat.' The *-mēL* is instrumental suffix. The term 'fire canoe' for 'steamboat' is a common one among Indian tribes, there being many equivalents of the Kutenai *āqkink·ō'k.ō yāktsō'mēL.*

65. *Yitskimī'is.* 'His pail,' — properly a vessel or 'kettle' of woven grass or split willow. *Yitskimī'is* is the oblique case in *-is*, of *yitskī'mī.*

The alphabet used in this article is that employed by the author in the *Report of the British Association for the Advancement of Science* for 1892.

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SOME PLANT NAMES OF THE UTE INDIANS

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WHILE among the Gosiute Indians in the spring of 1901, the writer made the acquaintance of a Uinta Ute, named Tungaip, who had taken up a temporary abode there because of factional trouble among his own people such as to make his absence from them necessary to his safety. From him I secured the partial list of plant names herewith presented. The paper is now published in this preliminary and tentative form only because I do not foresee the opportunity to extend and elaborate or otherwise to better it, and in the hope that it may prove of some interest or aid to others. The names were obtained almost exclusively at the time mentioned from the now lamented Tungaip. With a few exceptions they have not been tested through others of his tribe, and some errors may therefore occur, especially in the case of the less familiar species.

The Ute proper held the richer game portions of Utah and adjacent parts, and were to a much greater degree hunters, and more warlike, than most of the relative tribes. Their dependence upon the vegetable kingdom was, naturally, less intimate than with such tribes as the desert-dwelling Gosiute,[1] though no doubt a complete list of all kinds of serviceable plants among them would prove large.

As compared with some related dialects, the language, among other things, appears to show a more frequent development of *v* in place of *b*, especially in the nominal endings, and of *r* in place of *t* or *d*. For example, *-ûp* is heard as *-ûv*, *-av*, and *-ɪv*, depending on phonetic relations. The syllables *-go-ûp*, and *-gi-ûp*, sometimes heard as *-gwûp* or *gwɪp*, in Ute become *-go-ûv* or *-gi-ɪv*, thus easily passing to *gwûv* or *-gwɪv*, in which form most commonly heard.

[1] This name is not derived etymologically from the name of chief Goship as is so often suggested. Goship was chief over a band of closely related Indians, but not over the Gosiute proper. The name is compounded from *kútsɪp*, or *gútsɪp*, meaning primarily 'ashes,' and hence, secondarily, 'parched or dry earth,' 'desert earth,' etc., and Ute; i. e., rendered freely, the name may be said to mean 'Desert Ute.'

This is in line with a general phenomenon resulting from a strong tendency in the language toward an easy or gliding phonetic softness. The phenomenon as it appears to me is in the frequent suppression of syllables and letters, especially of vowels. In some cases vowels are heard very lightly and in others not at all. This results in the accumulation of consonants, of which illustrations are given among the examples below. There would seem to be a more frequent shifting of the primary accent to the second syllable, or, more rarely, to the third.

Examples of apparent condensation are :

kwi'ûv, oak, corresponds to Shoshoni and Gosiute *kwi'ni up*.
pagwai'ûv, maple, corresponds to Shoshoni and Gosiute *pa'gwi ni up*.
tu'ca-gar, white, is frequently heard as *tcar* (cf. following word also).
tsa'-kûm, white rabbit, cottontail, is probably derived from the preceding word *tu'ca-gar*, meaning white, and *kûm*, rabbit.
k'sa-ka-nav, or *ksa-nav*, a species of willow, from *ku'-tsi-*, ashes, hence gray, etc., in reference to the pubescent covering, or in some plant names to the dryness of habitat, and *ka-nav-*, general term for willow. The corresponding Shoshoni and Gosiute word is *ku'tsi-si-o-pi* ; *si'-o-pi*, or *shi'-o-pi*, in these languages corresponding to *ka-nav*.
kai-siv, Cornus or kinnikinnick, corresponds to Shoshoni *ăñ'ka-sib*.

Other cases similar to those above given occur in the subsequent list of plant names.

From such comparisons and study as I have made, the conclusion would seem justified that the primary roots of the Ute language are monosyllabic or largely so, as they are in the Gosiute. While a discussion of this subject cannot properly be entered upon here, some of the particles and combinations more frequently occurring in the plant names presented, more especially in the terminations, may be discussed briefly. Various examples of primary roots will be indicated in the analyses of words selected for illustration below :

(1) *b, p, v.* — Indicating, in general, substance or material in nouns ; in verbs occasionally indicating the production of a material thing ; sometimes giving a participial or adjectival effect. Far most common as the noun ending, indicated in the following :

(2) *-ûp, -ûv.* — A nominal ending added to verbs and indicating in

general the substance or material involved; hence object or thing in general. For example:

o-pin-go-ûv(-gwuv), fence (of wood): *o-pi*, wood, + *n*, adjectival ending, q. vid., + *go*, verbal root meaning to enclose or surround, + *-ûv*.

tik·ûp, food: *ti-ki*, eat, + *-ûv*; hence, material to eat.

to-tsi-va-wûv, hair of head: *to-tsi-in*, head, + *wu*, thread or hair-like object, hence hair in general, + *-ûv*.

ko-nov, sack: *go*, *ko*, root meaning to enclose or to surround, as indicated under the first example, + *no*, root meaning to carry, move, etc., + *-ûv*.

tim-bi-ûv, bridle: *tim-bi*, mouth, + *-ûv*.

It is a common ending in plant names, as may be seen from an examination of the general list given later. In these names it has practically the meaning of "plant" in many cases. In some of these it is evidently the representative of *ó-pi*, wood, tree, or plant, rather than of *úp* as in the case of *sho-av*, cottonwood, corresponding to Gosiute *so'-o-pi*.

(3) *-ûmp*. — A nominal ending indicating, in most cases, material or substance of service or use. In plant names it hence generally indicates the plant or plant product as useful for food. Its general use in this connection may be indicated by the Gosiute word for oats, *o-at-ump*, which appears to be simply the English word with *-ump* added.

The particle seems doubtless a development of *-ûm* or *-m*, and *-ûp*; i. e. of the combination *-ûm-ûp* or of *-mûp*. *Ûm* or *-m* following or added to a noun or noun group has a possessive or adjectival effect. By transliteration *-ûmp* is derived. This may be seen, for example, in the Gosiute word for currant (the berry), which corresponds closely to the Ute, but is given because better known to me in its changes. This word is *po-gon-ûp*, but quite as frequently is heard as *po-gûmp*. Hence it will be easily seen why *-ûmp* is primarily added to other nouns, in contrast with the preceding ending, *-ûp*, which is primarily added to verbs, and also how, in most cases where it would primarily be used, the force would be to indicate material of service. The suffix is far most common in the combination indicated under (4). Examples:

po-gûmp, currant (the berry). The name for the plant as a whole is *po-gomp-ĭv*, this being a good illustration of the point made previously that in plant names the ending *-ûv* (*-ĭv*) has often the force of "plant."

ku-si-a-kŭmp, balsam-root: *ku-tsi-*, gray, ashen, in reference to the dense coat of hair on the plant, + *a-ka*, stalk, shoot, etc., + *-ûmp*. The young shoots, leaves, and their petioles, of this plant were formerly eaten.

to-ûmp, service-berries.

(4) *-nûmp*. — A development of the preceding, consisting of that in combination with *na*, a particle primarily added to a verb to indicate means or instrument, *-na-ûmp* becoming condensed to *-nûmp*, which in turn has become an integral suffix. It indicates instrument or means. Rarely it is used like *-ûmp* or even *-ûp* where euphony is obtained thereby. Examples:

ka-ri-nûmp, chair or saddle: *ka-ri*, sit down, + *-nûmp*.

tĭ-ki-nûmp, table: *tĭ-ki*, eat, + *-nûmp*.

ta-bi-nûmp, clock: *ta-bi*, sun, + *-nûmp*.

ta^{n}-gi-nûmp, stirrup: apparently from *ta*, particle indicating the foot or relation to it (nasalized, as is commonly so with vowels before *g* or *k*), + *gi*, verbal particle indicating pressing or thrusting into, + *-nûmp*.

(5) *t, d, r*. — As an ending indicates quality, condition, or relation, and hence primarily is adjectival. It is a common adjective ending, such adjectives being sometimes used as nouns representing things having the qualities indicated. It is the ending in a number of plant names. Examples:

añ-kar, red. (And so with other names of colors. Cf. the Gosiute and Shoshoni ending in the equivalent *t*, in the combination *-bit;* as, *añ-ka-bit*, red, *tu-o-bit*, black, etc.)

to-kar, black.

at, good.

a-bat, great.

tĭn-zi-ĕr, hard.

na-ri-ĕnt, strong.

ku-bĕr-ant, long, tall.

kwa-nar, kwa-na-ri, smelling, stinking.

pu-ner, pu-ne-ri, looking, seeing, vision, adj. Cf. *pu-ni-ke*, see; *pu-ne-ri-nûmp*, field-glass, i. e., 'vision instrument.'

kwi-o-kĭnt, (1) circular, (2) circle: *kwi-o-kĭn*, to move or make move in a circular path, etc., + *t*.

ti-ga-kĭnt, (1) touching, bordering, (2) boundary-line: *ti-ga-kĭn*, to put against, to touch, to border, + *t*.

(6) *-tc, -ts, -ds.* — A common ending in the names of plants and animals, seeming quite generally to indicate an object living or regarded as living, a person or part of a living thing or person. The usage may be indicated by the word for mule, *mu-rats*. This seems to come from the English word mule, the *l*, which does not occur in Ute, being replaced by *r* (cf. *ka-va*, horse, apparently from Spanish caballo, the *ll* here being wholly dropped) and *ts* added. It is a very common ending in plant names, perhaps that most frequent. Examples:

a-ran-gûtc,	locust.	*ûwits*,	plover.
o-nûm-bûtc,	badger.	*ai-pĕds*,	boy.
sa-rĭtc,	dog.	*to-wats*,	man.
ta-bûn-dsĭtc,	fox.	*na-ni-pĕds*,	old man.
yûm-bûtc,	porcupine.	*pi-ads*,	mother.
no-vûntc,	person, Ute.	*pu-rĕts*,	arm.
wan-dsĭtc,	antelope.		

It may be found that *ats* (*ĕts, ăts*), occurring so frequently as an ending in Ute plant names, is in some cases to be regarded as integral (secondarily) and as alone the name or as having been the name of a particular plant, as is the case in Gosiute. Here it is applied to species of Amarantus, useful as food, and is made terminal in names of some plants thought to resemble this one in appearance or use.

(7) *-m, -n, -ûm.* — Following a noun indicates possession or relation or gives the effect of an adjective to the noun to which added. Examples:

o-pĭm-go-ûv, fence: *o-pi*, wood, + *m*, + *go*, + *ûv*. (Vid. ante under *-ûp*.)

ka-bam-sĭ-ta-gwĭv, horse medicine: *ka-ba, ka-va*, horse, + *m*, + *sĭ-ta-gwĭv*, medicine.

sa-gwam-sĭ-ta-gwĭv, Abronia fragrans, which is used as a stomach medicine: *sa̓-gwa-*, stomach, + *m* + *sĭ-ta-gwĭv*, medicine.

tĭm-pĭm-ûv, Cystopteris fragilis: *tĭm-pi*, rock, + *ûv*, i. e. rock (loving) plant.

tĭmp, *tĭmpi*, mouth: *ti*, root meaning to strike or force into, cut into, and hence to bite; thus pertaining to a cutting object, + *m*, + *bi*, meaning part of a living body, etc. (Cf. the following, and also the combination *-bitc*, rare in Ute but common in related dialects.)

namp, *nam-pi*, foot: *na*, thing beneath or supporting, bottom part, etc., + *m*, + *bi*, as in the preceding.

List of Plants According to Scientific Names

Abronia fragrans Nutt. Sand Puff. *sa-gwam-sĭ-ta-gwĭv*: apparently *sa-gwa-*, stomach, + *sĭ-ta-gwĭv*, medicine. The roots and flowers said to be used as a remedy in stomach and bowel trouble. The name is probably not specific, and will likely be found to be applied to other plants put to similar medicinal use.

Acer glabrum Torr. Maple. *pa-wai-'-ûv*: *pa*, water, + *kwi-ûv*, oak.

Achillea millefolium L. Yarrow. *i-am'-sĭ-ta-gwĭv*: *i-a*, wound, etc., + *m*, + *sĭ-ta-gwĭv*, medicine. Applied externally on bruises, etc., and also used as a tea in cases of sickness.

Agropyrum repens Beauv. Blue-joint. *?wai-*.

Allium bisceptrum Watson, **acuminatum** Hook. Onion. *küñ-ka*. Bulbs and leaves eaten.

Amelanchier alnifolia Nutt. Service-berry. *to-ûmp'*. Berries were formerly an important food, being used in season and also preserved by drying for winter. Cf. Shoshoni and Gosiute *tĭ'-ûmp*.

Amsinckia tesselata. *tu'-ka-rûmp*. Cf. the Gosiute *ku-ni-ro-ûmp*.

Antennaria dimorpha Torr. and Gray, etc. Everlasting. *tĭm'-pĭn-tsau-ûv*: *tĭm-pi*, rock, + *n*, + *tsau*, submerge, cover under, etc., + *ûv*; i. e., apparently, rock-matting plant.

Arabis holboelli Hornem. Rock Cress. *qta'-ko-mav*.

Artemisia tridentata Nutt. Sage-brush. *ma-av*; *ma-ap*. Leaves used in decoction as medicine.

Asclepidiora decumbens Gray. Milkweed. *sa-na'-ko-mav*.

Aspidium filix-mas Schwartz. Wood Fern. *kai'-ban-kĭm-bĭs*: *kai-ba*, mountain, + *n*, + *kĭm-hĭa*.

Astragalus iodanthus Watson. Buffalo Bean. *tĭ'-wĭ-pĭ-tcûm-av*: probably from *ti-wip*, earth, + *tsu*, *tcu*, press, press over, etc., + *m*, + *ûv*; i. e., likely meaning earth or ground-matting plant.

Balsamorrhiza sagittata Nutt. *ku-sĭ'-a-kûmp*: *ku-sĭ-*, from *ku-tsĭp*,

ashes, hence meaning gray or whitish, in reference to the whitish covering of pubescence so conspicuous in this plant, + *a-ka*, shoot, etc., + *-ûmp*. The young shoots and leaves were formerly eaten, hence the name. The roots also were eaten to some extent.

Beckmannia erucæformis Host. Slough Grass. *a-wat'-o-gwĭv : a-wat* + *o-gwĭv*.

Berberis repens Lindl. Oregon Grape; Barberry. *ksìp-o-a-ats*.

Betula occidentalis Hook. Birch. ? *pa-gwai'-ûv*.

Calochortus nuttallii Torr. and Gray. Sego. *si'go*. The bulbs of this plant were formerly much used as food. The Gosiute and Shoshoni name is identical.

Capsella bursa-pastoris Mœnch. Shepherd's Purse. *mo'-tĕn-de-ăts*. Introduced into the region.

Capsella divaricata Walp. Shepherd's Purse (native). *mo'-tĕn-de-ăts*.

Carex jamesii Torr. Sedge. *pi'-gwûts* (prob. *pa'-gwûts*).

Castilleia parviflora Bong. Painted-cup. *mo'-ten-dĭt*. Root used as a medicine in bowel trouble.

Caulanthus hastatus Watson. *añ-ga-ko-rĭmp*.

Citrulus vulgaris (cultivated). Watermelon. *shan-ti-kût*.

Claytonia caroliniana Michx. Spring Beauty. *ti-bi-wu-tcû^{n}k*. Formerly the bulbs were eaten extensively.

Collinsia parviflora Dougl. *mi'-pû^{n}-ga-shi''-čts*. Plant said to have been used externally as a remedy for sore flesh, like Gilia, q. vid.

Commandra pallida A. DC. Bastard Toad-flax. *sa-gwa-si-û^{n}-gûts*. Roots used as a medicine in headache, etc.

Cornus stolonifera Michx. Kinnikinnick; Cornel. (1) *kai'-sĭv*; (2) *a-va-tu-tûm-bûtc-ûm-av*. Cf. the Shoshoni *añ-ka-sib*, this name referring to the red bark ("red willow," probably). The Ute name seems to be condensed.

Cowania mexicana Don. Cliff Rose. *pu-i''-tcûm-av*.

Cymopteris longipes Watson. *o-an-tûv*. Leaves formerly boiled and eaten as food. It seems probable that the Shoshoni name for this plant, *toi'-yan-dûp* (*toi'ya-bi*, mountain, + *n*, + *dûp*), preserves most nearly the original form, and that the Ute *o-an-tûv* and the Gosiute *an-dsûp'* are abbreviated.

Cystopteris fragilis Bernh. Fern. *tim-pim-ûv : tim-pi*, rock, + *m*, + *ûv*.

Delphinium menziesii DC. and **bicolor** Nutt. Larkspur. *sa-gwa-rĭnt*.

Draba nemorosa L. Whitlow Grass. *kus-pa-sen-di-ăt*.

Eleocharis palustris R. Br. Spike-rush. *pa-o^{n}-ga-da-pin-tid : pa-o*, referring to water, + *ga-da-pin-tid*.

Elymus canadensis L. Lyme Grass. *o-do-rûm-bĭv.* Seeds formerly gathered as food.

Eragrostis purshii Schrad. *kaib'-o-gwĭv : kai-ba,* mountain, + *o-gwĭv.*

Erigeron canus Gray. Fleabane. ? *sa-gûm-sĭ-ta-gwĭv.*

Eriogonum ovalifolium Nutt. Silver-plant. *k'sûm-sĕd-au-ge-ĕts :* probably from *ku-tsĭm,* ashen, gray, etc., + *sĕd-añ-ge-ĕts.* Used as medicine.

Equisetum arvense L. Horsetail. (*a*) fertile stems, *tu-ko-wûts ;* (*b*) sterile stems, *to-tsi-wûts.*

Equisetum lævigatum Braun. Scouring-rush. *ya-a'-ti-nûmp.* Likely from *ya-a-gi,* cry, call out, etc., + *t,* + *-nûmp,* instrument, etc., in reference to its use by children as whistles.

Eragrostis purshii Schrad. *kaib'-o-gwĭv.*

Erodium cicutarium L'her. Storks-bill ; Alfilaria. *pa'-bo-i-ăts.*

Erysimum asperum DC. *sa'-go-a''-sĭnt.*

Ferula multifida Gray. *to-tûv.* The root furnishes one of the medicines most highly valued among this and related peoples. It is especially applied externally upon wounds and bruises, being first reduced to a pulp between stones or in a mortar. It is also used for distemper in horses ; for this purpose it is burned in a pan held beneath the horse's nose.

Fritillaria atropurpurea Nutt. Tiger Lily ; Brown Lily. *kat'-rûm-sĭ-ta-gwĭv.* The bulbs and roots used as medicine in the form of a decoction. It is said to be taken but sparingly because in larger quantities it is regarded as dangerously poisonous.

Fritillaria pudica Spreng. Buttercup ; Yellow Bell. *pim'-ĭ-kwi-ĕts.* Formerly the bulbs were used as food.

Gilia gracilis Hook. *yo-gûm-sĭ-ta-gwĭv : yo'-gu-vĭtc,* coyote, + *m,* + *sĭ-ta-gwĭv,* medicine. Used as a poultice on bruised or sore leg. In this connection cf. the Shosnoni name for this little Gilia, so abundant in the region : *i-am-bĭp,* the first part of which would seem to refer to wound.

Glaux maritima L. Sea-milkwort. *tsûn'-a-na-di-ĕts.*

Grass (general term). *o'-wiv.*

Grayia polygaloides Hook and Arn. Shad Scale. ? *sa'-mûv.*

Grindelia squarrosa Dunal. Gum-plant. *ku-ats-ûm-sĭ-ta-gwĭv : ku-ats* + *ûm,* possessive, + *si-ta-gwiv,* medicine. Said to be used as a cough medicine. Cf. Senecio.

Guttierezia euthamiæ Torr. and Gray. Lesser Rabbit Brush ; Torch-weed. *shpûmp.*

Hedysarum mackenzii Richard. *kai-va-ma-mû-tca-kwûv ; mo'-tĕm-be-ĭtch : kai'va*, mountain, + *m*, + *mu-tca-kwuv*. Roots said to be used as medicine.

Hydrophyllum capitatum. Waterleaf. *o-at'ĕm-bi-ĕts.*

Iva axillaris Pursh. *tam-ĕs'-ta-gwĭv ; ta-ma-sĭ-ta-gwĭv : ta-ma* + *sĭ-ta-gwĭv*, medicine. Occasionally used as medicine.

Juncus balticus Deth. Bog-Rush. *pau-wûv.* Corresponding to the Shoshoni and Gosiute name for the same plant, *pa'hwap*, also heard more fully as *pa'-ûm-ûp* : *pa-ûm*, aquatic, + *ûp.*

Juniperus californica var. **utahensis.** Cedar. *wap.* The name is probably from *wa-ap*, meaning, in some dialects (e. g., Shoshoni), to burn, the reference probably being to the use of the bark, etc., in making slow-match and for kindling purposes.

Krynitzkia sericea Gray. *yu'-bi-shad-ûmp.* Root used as stomach medicine.

Lathyrus ornatus Nutt. Everlasting Pea. *sa-gwa'-sa-ĭnt.*

Lepidium intermedium Gray. Pepper-grass. *sau'-ga-mi-ants.*

Lepidium sativum. Pepper-grass. *wa'-to-ma-sĭv.*

Lithospermum pilosum Nutt. Gromwell. *tsût-kûp.* Roots used as medicine in form of decoction ; diuretic in action. I have seen it used by an old couple for this purpose.

Lonicera utahensis Watson. Woodbine. *te-ĕd-kav : te-a, ti-a*, deer, + *kav.* Cf. the Gosiute name for this plant : *parri-ĕn-dĭ-kûp*, meaning elk food.

? **Malvastrum munroanum** Gray. False Mallow. *sa-gwûn-na-ga-ats.*

Matricaria discoidea DC. May-apple. (*ma*)-*mo-a-na-nûmp.* Used as a medicine.

Orogenia linearifolia Watson. *pĭn-'ka-pai-ăts.*

Pachystima myrsinites Raf. Box. *te-ĕ-kav.* Cf. Lonicera.

Pentstemon glaber Pursh. Beard-tongue. *mû-tcĕm-bi-a.*

Phacelia menziesii Torr. ? (*ma*)-*mû'-tĕm-bi-a.*

Phlox longifolia Nutt. Phlox ; Sweet William. (*mo*)-*mu-'kwi-ĕts.*

Pinus mojophylla (nuts of). Pine-nuts. *ti-va.*

Populus angustifolia James. Cottonwood. *sho-av : sho* + *av*, from *o-pi*, wood. Cf. Gosiute *so-o-pi.*

Potentilla anserina L. Five finger. *qte'-ăñ-gĭv.*

Pteris aquilina L. Brachen. *kai-ban-kĭm-bĭs : kai-ba*, mountain, + *n*, + *kĭm-bĭs.* See also Aspidium filix-mas Schwartz.

Quercus undulata var. Rocky Mountain Oak ; Scrub Oak. *kwi'-ûv.* The Gosiute form is *kwi-ni-ûp*, and is sometimes heard as *ku-ni-ûp.*

Ranunculus aquatilis L. var. Buttercup. *pai'-a-pu-ĕts.*

Ranunculus cymbalaria Pursh. Buttercup. *pau-ûs-a-nau-ga-ant.*

Rhus aromatica Ait. var. **trilobata** Gray. Sumach; Squaw-berry. *mo-tam-bi-ăts.* The berries, are eaten.

Ribes aureum Pursh. Buffalo or Missouri Currant. *po-gomp'-ĭv : po-gomp*, currant (the berry), + *ûv.* Berries used as food.

Rosa fendleri Crepin. Rose. *añ-ga-si-ûñ-gĭv : añ-kar*, red, + *si-uñgen-*, stem, etc., + *uv.* Berries sometimes eaten.

Salix amygdaloides Anders., **lasiandra** Benth., var., and **cordata** Muhl. *k'sa-nav; k'sa-ka-nav : ksa*, probably shortened from *ku'-tsi-*, ashen, grayish, etc., + *ka-nav'*, willow. Used in basketry, etc.

Salix flavescens Nutt. Willow. *ta-ma-nûmp-ĭn-av; ta-ma-nûmp-in-ka-nav.*

Salix longifolia Muhl. Willow. *k a-nav'.* Used in basketry, etc.

Scirpus validus Vahl. Bulrush. *t'su-saip.* Lower, tender portions eaten.

Senecio sp. Groundsel. *ko-ats-ĕm-sĭ-ta-gwĭv : ko-ats*, + *ĕm*, possessive, + *sĭ-ta-gwĭv.* Used as medicine. Cf. Grindelia.

Shepherdia argentea Nutt. Buffalo-berry. *añ-gût-a-gwĭv.* Berries formerly used as food to some extent.

Shepherdia canadensis Nutt. *ta-ma-nûmp.*

Sisymbrium canescens Nutt. Hedge Mustard. *po-e'-tcĕm-ĕn.* Used as medicine.

Smilacina amplexicaulis Nutt. False Solomon's Seal. *yo-gwo'-ta-ma-nûmp : yo-go-vĭtc*, coyote, + *ta-ma-nûmp.* Cf. the Gosiute *i-tcu-pain-po-go-nûp*, from *i-tcu-pa*, coyote, + *n*, possessive, + *po-go-nûp*, berry, i. e., 'coyote berry.'

Solanum tuberosum (cultivated). Potato *tsĭñ.* Transferred from the name of a native plant.

Streptanthus cordatus Nutt. *o-nûn-ga-ats.*

Taraxicum officinale Weber. Dandelion. *(mo)-mûn'-ti-ad-qsûp.* Leaves formerly used as food. Cf. the Shoshoni *mû-tca-gi-a.*

Tellima parviflora Hook. *añ-gai-ya-ga-ti-nûmp.*

Trifolium, general term. Clover. *mo'-pi-ănts; mû'-pi-ănts.*

Trifolium pratense L. (introduced). Red Clover. *?sa-gwa-ĭn-di-ûp.*

Triglochin maritimum L. Arrow-grass. *pa'-sau-wa-dint.*

Troximon sp. *añ-'ka-pi-sa-wats.* Leaves formerly eaten, like the dandelion.

Valerianella congesta. *āñ-go-i-ènts.*

Veronica aggerata Speedwell. *pu'-i-ants.*

Vicia americana Muhl. Vetch. *ka-na-tè'-ānts; pu-i-pi-ûm-av: pu-i-pi*, blue, + *ûm*, + *av*. The second name refers to the blue or purplish flower and is probably general.

Viola beckwithii. Wild Pansy. *ka-bam-sĭ-ta-gwĭv: ka-ba*, horse, + *m*, + *sĭ'-ta-gwĭv*, medicine.

Viola canina L. var. **sylvestris** Regel. Violet. *sau'-o-ma-ānts.*

Viola cucullata Ait. Violet. *sau-èd-în-do-èts.* Roots used as medicine.

Zygadenus nuttallii Gray. Poison Sego. *ta-bă'-si-gwĭv: ta'-bi*, sun, + *si-go*, + *ĭv*, 'sun sego.' The bulbs of this plant are poison, hence the common name as given above. The sego proper is Calochortus nuttallii.

Alphabetical List of Plants According to Ute Names

añ-gai-ya-ga-ti-nûmp. Tellima parviflora Hook.

añ-ga-ko-rĭmp. Caulanthus hastatus Watson. Rose.

añ-ga-si-ûñ-gĭv. Rosa fendleri Crepin. Buffalo-berry.

añ-go-i-ènts. Valerianella congesta.

añ-gût-a-gwĭv. Shepherdia argentea Nutt.

añ-ka-pi-sa-wats. Troximon sp.

a-va-tu-tûm-bûtc-ûm-av. Cornus stolonifera Michx. Kinnikinnick; Cornel. Cf. *kat'sĭv.*

a-wat'-o-gwĭv. Beckmannia erucæformis Host. Slough Grass.

i-am'-sĭ-ta-gwĭv. Achillea millefolium L. Yarrow.

ka-bam-sĭ-ta-gwĭv. Viola beckwithii. Wild Pansy.

kaĭ'-ban-kim-bis. Aspidium filix-mas Schwartz, Pteris aquilina L. Wood fern; Bracken.

kaib-o-gwĭv. Eragrostis purshii Schrad.

kai-rûm-sĭ-ta-gwĭv. Fritillaria atropurpurea Nutt. Tiger Lily; Brown lily.

kai-va-ma-mû-tca-kwûv. Hedysarum mackenzii Richard. Vetch.

kaib-o-gwĭv. Eragrostis purshii. Kinnikinnick; Cornel.

kai-sĭv. Cornus stolonifera Michx. Willow.

ka-na-tè'-ānts. Vicia americana Muhl.

ka-nav'. Salix longifolia Muhl.

ko-ats-ĕm-sĭ-ta-gwĭv. Senecio sp.

k'sa-ka-nav; ksa-nav. Salix amygdaloides Anders; Salix lasiandra Benth. var.; Salix cordata Muhl.

ksĭp-o-a-ats. Berberis repens Lindl. Oregon Grape; Barberry.

k'sûm-sed-an-gɐ-ĕts. Eriogonum ovalifolium Nutt. Silver Plant.
ku-ats-ûm-sĭ-ta-gwĭv. Grindelia squarrosa Dunal. Gum Plant.
küñ-ka. Allium bisceptrum Watson ; Allium acuminatum Hook. Onion.
ku-sĭ'-a kûmp. Balsamorrhiza sagittata Nutt. Balsam root ; Arrow root.
kus-pa-sĕn-dĭ-ăt. Draba nemorosa L. Whitlow Grass.
kwĭ'-ûv. Quercus undulata Torr. var. Rocky Mountain Oak ; Scrub Oak.
ma-ab ; ma-av. Artemisia tridentata Nutt. Sage-brush.
? (ma)-mû-tĕm-bi-a. Phacelia menziesii Torr.
mĭ'-pûⁿ-ga-shĭ''-ĕts. Collinsia parviflora Dougl.
(ma)-mo-a-na-nûmp. Matricaria discoidea DC. May Apple.
mo-mu'-kwi-ĕts. Phlox longifolia Nutt. Phlox ; Sweet William.
mo-pi-ănts. Various species of Trifolium. Clover.
mo-tam-bi-ăts. Rhus aromatica Ait. var. trilobata Gray. Sumach ; squaw-berry.
mo-tĕn-de-ăts. Capsella bursa-pastoris Mœnch. ; Capsella divaricata Walp. Shepherd's purse.
mo'-ten-aĭt. Castilleia parviflora Bong. Painted-cup.
(mo)-mûn'-ki-ad-ksûp. Taraxacum officinale Weber. Dandelion.
mû'-tcĕm-bi-a. Phacelia menziesii Torr.
o'-ant-ûv. Cymopteris longipes Watson.
o-aĭ'-ĕm-bi-ĕts. Hydrophyllum capitatum. Water leaf.
o-do-rûm-bĭv. Elymus canadensis L. Lyme Grass.
o-nûn-ga-ats. Streptanthus cordatus Nutt.
o-wiv. Grass (in general).
pa'-bo-i-ăts. Erodium cicutarium L'her. Stork's Bill ; Alfilaria.
? pa-gwaĭ'-ûv. Betula occidentalis Hook. Birch.
paĭ'-a-pu-i-ĕts. Ranunculus aquatilis L. var. Buttercup.
pa-oⁿ-ga-da-pĭn-tĭd. Eleocharis palustris R. Br. Spike-rush.
pa'-sau-wa-dĭnt. Triglochin maritimum L. Arrow Grass.
pau-ûs-a-nau-ga-ant Ranunculus cymbalaria Pursh. Buttercup.
pau-wûv. Juncus balticus Deth. Bog-rush.
pa-waĭ'-ûv. Acer glabrum Torr. (see also *pa-gwaĭ'-uv*). Maple.
pi-gwûts. Carex Jamesii Torr. Sedge.
pĭm'-i-kwi-ĕts. Fritillaria pudica Spreng. Yellow Bell ; Buttercup.
pin'-ka-pai-ăts. Orogenia linearifolia Watson.
po-e'-tcĕm-ĕn. Sisymbrium canescens Nutt. Hedge Mustard.
po-gomp'-ĭv. Ribes aureum Pursh. Buffalo or Missouri Currant ; Currant.
pu'-i-ants. Veronica aggerata. Speedwell.

pu-i-pi-ûm-av. Vicia americana Muhl. Vetch.
pu-i'-tcûm-av. Cowania mexicana Don. Cliff Rose.
qta'-ko-mav. Arabis holboelli Hornem. Rock Cress.
qte'-ăñ-gĭv. Potentilla anserina L. Five Finger.
sa'-go-a''-sĭnt. Erysimum asperum DC.
? *sa-gûm-sĭ-ta-gwĭv.* Erigeron canus Gray. Fleabane.
sa-gwa-ĭn-di-ûp. ? Trifolium pratense L. ? Red Clover.
sa-gwam-sĭ-ta-gwĭv. Abronia fragrans Nutt. Sand Puff.
sa-gwa-rĭnt. Delphinium menziesii DC.; Delphinium bicolor Nutt. Larkspur.
sa-gwa'-sa-ĭnt. Lathyrus ornatus Nutt. Everlasting pea.
sa-gwa-sĭ-ûñ-gûts. Commandra pallida A. DC. Bastard Toad-flax.
sa-gwûn-na-ga-ats. ? Malvastrum munroanum Gray. ? False Mallow.
sa'-mûv. ? Grayia polygaloides Hook and Arn. ? Shad Scale.
sa-na'-ko-mav. Asclepidiora decumbens Gray. Milkweed.
sau-ĕd-in-do-ĕts. Viola cucullata Ait. Violet.
sau-ga-mi-ants. Lepidium intermedium Gray. Pepper-grass.
sau'-o-ma-ănts. Viola canina L. var. sylvestris Regel. Violet.
shan-ti-kût. Citrulus vulgaris. Watermelon.
sho-av. Populus angustifolia James. Cottonwood.
shpûmp. Guttierezia euthamiae Torr. and Gray. Rabbit-brush; Torch-weed.
si-go Calochortus nuttallii Torr. and Gray. Sego.
ta-bă'-sĭ-gwĭv. Zygadenus nuttallii Gray. Poison Sego.
ta-ma-nûmp. Shepherdia canadensis Nutt.
ta-ma-nûmp-ĭn-ûv; ta-ma-nûmp-ĭn-ka-nav. Salix flavescens Nutt. Vid. sub. Salix in preceding list. Willow.
ta-ma-sĭ-ta-gwĭv; ta-mes'-ta-gwĭv. Iva axillaris Pursh.
te-ĕd-kav. Lonicera utahensis. Woodbine.
te-ĕ-kav. Pachystima myrsinites Raf. Box.
ti-bi-wu-tck^{n}. Claytonia caroliniana Michx. Spring-beauty.
tim'-pĭn-tsau-ûv. Antennaria dimorpha Torr. and Gray. Everlasting.
tĭm-pĭk-ûv. Cystoperis fragilis Bernh. Fern.
ti-va. Nuts of Pinus monophylla Torr. Pine-nuts.
tĭ'-wĭ-pi-tcûm-av. Astragalus iodanthus Watson. Buffalo-bean; Rattle-weed.
to-tsi-wûts. Equisetum arvense L., sterile stems. Horsetail.
to-tûv. Ferula multifida Gray.
to-ûmp'. Amelanchier alnifolia Nutt. Service-berry.
tsiñ. Solanum tuberosum. Potato.

tsûn'-a-na-di-čts. Glaux maritima L. Sea milkwort.
t' su-saip. Scirpus validus Vahl. Bulrush.
tsût-kûp. Lithospermum pilosum Nutt. Gromwell.
tú-ka-rûmp. Amsinckia tesselata.
tu-ko-wûts. Equisetum arvense L., fertile stems. Horsetail.
wai. ? Agropyrum repens Beauv. Blue-joint grass.
wap. Juniperus californica var. utahensis. Cedar juniper.
wa'-to-ma-sĭv. Lepidium sativum. Pepper-grass.
ya-a'-ti-nûmp. Equisetum laevigatum Braun. Scouring Rush.
yo-gûm-sĭ-ta-gwĭv. Gilia gracilis Hook. Gilia.
yo-gwo'-ta-ma-nûmp. Smilacina amplexicaulis. Nutt. False Solomon's Seal.
yu'-bi-shad-ûmp. Krynitzkia sericea Gray.

PROVO, UTAH.

ANALYSIS OF THE MISSION INDIAN CREATION STORY

By THOMAS WATERMAN

THE creation stories of the various Mission Indian peoples of southern California have been the subject of a number of papers by different authors. The bulk of the material has been collected by Miss Constance Goddard DuBois, and has appeared from time to time in the *Journal of American Folk-lore*. A section of this author's paper in the University of California *Publications in American Archæology and Ethnology*, "The Religion of the Luiseño Indians," is also devoted to this subject. Other articles bearing on this general theme are "Two Myths of the Mission Indians of California," by A. L. Kroeber, and an account of a Diegueño creation myth included in "The Religious Practices of the Diegueño Indians," an unpublished manuscript by the writer of the present paper. With every list of papers on this or any related subject must be mentioned the earliest written account of Mission Indian mythology, the treatise of the Franciscan missionary Boscana. This is printed in Robinson's *Life in California* (New York, Wiley and Putnam, 1846) under the sub-title of "Chinigchinich." Supplementary to the Diegueño version of the creation story must be considered Miss DuBois' two "Chaup" or Cuyahomarr stories, though they are not concerned primarily with creation. They too were printed in the *Journal of American Folk-lore*. For the sake of brevity all of these sources have been arranged and assigned designations in the accompanying table.

As is perhaps well enough known, the term "Mission Indians" applies to three peoples in southern California, the Luiseño (Shoshonean), the Cahuilla (also Shoshonean), and the Diegueño (Yuman). Historically, the term does not apply to the Mohave (the linguistic kindred of the Diegueño, living on the Colorado river) since these latter never came under the direct influence of the Missions. In mythology, however, and in religion, these Mohave show un-

doubted traces of relationship with the Mission peoples proper. This relationship is so evident, especially as regards the Luiseño, that a discussion of the Mission Indian stories would be incomplete without a reckoning with the Mohave account. While historically inaccurate, the inclusion of the Mohave among the Mission Indians is critically a necessity in a consideration of mythology. In the following paper therefore this Mohave myth is discussed as one of the Mission group.

Author	Publication	Title	Pages	Designation
Boscana	In Robinson, *Life in California*, New York, 1846	(San Juan Capistrano) Serrano Version	241–248	A
Boscana	Idem.	(San Juan Capistrano) Playano Version	249–257	B
C. G. DuBois	*Journ. Am. Folk-lore*, XVII, 1904	Luiseño Creation Myth (La Jolla)	185–188	C
C. G. DuBois	Idem., XIX, 1906	Luiseño Creation Myth	52–60	D
C. G. DuBois	*Univ. Cal. Publ. in Am. Arch. Ethn.*, VIII, 1908	Luiseño Creation, Third Version	128–138	E
C. G. DuBois	Idem.	Luiseño Creation, Fourth Version	138–148	F
A. L. Kroeber	*Journ. Am. Folk-lore*, XIX, 1906	(Luiseño) Origin of the World	312–314	G
A. L. Kroeber	Idem.	Mohave Account of Origins	314–316	H
C. G. DuBois	Idem., XIV, 1901	(Diegueño) Story of the Creation	181–184	J
C. G. DuBois	Idem., XXI, 1908	Yuma Creation Myth	236	K
Thomas Waterman	Univ. of Cal. Ms.	(Diegueño) Creation Story		L
C. G. DuBois	*Journ. Am. Folk-lore*, XVII, 1904	The Story of the Chaup	217–242	M
C. G. DuBois	Idem., XIX, 1906	The Story of Cuyahomarr	147–164	N

NATURE OF OUR SOURCES

Of the papers enumerated in the above table those by Miss DuBois (C, D, E, F, J, K) concern principally, as shown by the list, the Luiseño account. To these as coming from the same "tribe" must be added another Luiseño account, transcribed by Dr A. L. Kroeber (G). With these Luiseño versions must be compared the so-called "Serrano" and "Playano," or "inland" and "coast,' versions obtained by Father Boscana around Mission San Juan Capistrano (A, B). The people so named are subdivisions of the Luiseño linguistic group; and the myths therefore, as we would expect, are related more or less closely to the typical Luiseño versions. The same remark might almost apply to the "Cahuilla" mentioned in the opening paragraph, with the added note that their creation story, while never published, is almost certainly characterized by close adherence to the Luiseño form — so close, in fact, that the myths are practically the same. The Diegueño story is represented by three printed myths, two from Miss DuBois (J, K) and one (L) from the present writer.[1] The Mohave account is represented by only one printed version (H), but this is a summary or outline from a number of independent renderings. It therefore enables us to make a perfectly fair comparison of the foregoing with the Mohave account.

It must be mentioned in passing that the latest creation myth published by Miss DuBois (namely K) while called by that author a "Yuma" account, is presupposed in the following pages to be Diegueño. The reason for this is that the present writer considers her "Yuma" to be partially equivalent to his "Diegueño." "Yuma" is used by both the natives and whites of the region in question to denote vaguely either "the people to the southeast" or the supposititious predecessors in the land of the present race.[2] Thus the northern Diegueño in their English speech apply it to the southern Diegueños, who speak a slightly different dialect, and these in turn apply it to the Mohave. The term is therefore robbed of its exact

[1] Version J is from Mesa Grande, L from a Kamiyai at Campo, so that they represent the extreme north and south of Diegueño territory.

[2] The term as used by the Diegueño may be a corruption of the Luiseño word *yumaik*, 'formerly.'

significance, for in a technical sense they all, Diegueños and Mohave alike, are "Yumas." Since the myth fits into the Diegueño scheme in its internal features, and since these features make it absolutely certain that it is not Mohave, we may perhaps without violence accept it as plainly Diegueño.

Comparison is always most easy and convincing when the entire mythologies concerned can be studied side by side. Such a method makes the relationship between the southern California creation stories most apparent. The study even of extended parallel passages reveals a most interesting condition of interrelation. Either method is however inapplicable within the limits of a purely critical paper. The writer has therefore, in default of a better method, chosen a number of "incidents" or "themes" to furnish a basis of study. All of these are prominent elements in the mythologies concerned, and the reader will see that they are in the main typical not only of the Mission Indian but of the usual California creation story.

1. Origin: *a* by growth or birth.
   b by creation.
2. Origin of the sun.
3. Genesis of mankind.
4. Origin of culture.
5. Advent of death.
6. Culture-hero.
7. Death of the culture-hero.
8. Apotheosis of the culture-hero.
9. Rascal disposition of Coyote.
10. Migration of mankind.
11. Transformation into animals out of a human type.
12. Reversal in primeval times of the well-known conditions.
13. Sexual relations between brother and sister.

DISCUSSION OF PARALLEL THEMES IN MISSION INDIAN CREATION MYTHS

1a. *Origin by Birth or Growth*

As we have seen, there have been published seven accounts of the Luiseño creation myth. Of these six give an account of origins which may be outlined briefly as follows:

"In the beginning Sky (written variously as Tukmit, Tukmish, Tukomit, Tucomish, and Dupash) was a man, Earth (Tamaiovit, Tanowish, or Tamaiowot) was a woman. From their union were born all things, — people, the animals, the sun, trees, rocks, and rivers, — but not as we know them now. All things were then people" (A, C, D, E, F, G). Several accounts, notably E, F, and D, give a detailed account of certain "chaotic" existences which preceded the organization of Earth and Sky as man and woman. Things as they now are, however, came by birth from Earth as a mother. This, then, according to the Luiseño, is the origin of existence.

With this we must compare the Mohave account: "The first were the sky, a man, and the earth, a woman. These met far in the west and from their union were born . . . all the people, the animals, and plants." There follows on this introduction a slightly different train of incidents, but it is evident that the fundamental idea is the same.

1b. *Origin by Creation*

The Diegueño account however says that in the beginning everything was water (J 236, K 181, L). Things, in place of being born, were first created by two creators, Tuchaipa and his brother Yokomatis. All the Diegueño sources agree as definitely on this as do the Luiseño and Mohave sources on the other view of Origin. We find therefore a contrast at the outset between the Diegueño account on the one hand and the Luiseño-Mohave narratives on the other. This line of demarcation will be found evident in some degree throughout the following pages.

Before the position of our various sources on the matter of "primeval origin" can be considered as even tentatively sketched, mention must be made of several points in Miss DuBois' two accounts (J and K) which seem to contradict what has just been said, and to ascribe to the Diegueño a belief similar to that held by the Luiseño. For instance: "When Tuchaipa made the world, *the Earth is the woman, the Sky is the man* (J 181). "*When* (*Tuchaipa and Yokomatis*) *came forth from the Earth mother* they had to pass throughout the ocean which then covered the land" (K 236). These two sentences seem to flatly contradict what has just been

said, that there is a *contrast* between the Luiseño and Diegueño beliefs. A little further perusal, however, of the two passages quoted, shows that this supposition is groundless, and the contradiction more apparent than real. The first sentence begins: "When Tuchaipa made the world." Here we have described origin by creation, in place of the Luiseño origin by birth. Moreover in the following lines there is no actual mention of *birth from earth-mother*, which is the crux of the Luiseño type of myth. The second sentence furthermore, if it indicate that the Luiseño belief is the same as the Diegueño, is in hopeless contradiction with our other Luiseño sources (see D 53, and G 314). These reveal a belief that the ocean is earth-mother's urine. It is probable, indeed, that these two sentences came into the myths in question either from a bias on the part of the author, or from a combination of Luiseño and Diegueño story-elements by the native narrator. It is certain in the second place that whether or not these passages in question have a right to a place in the Diegueño myth, Tuchaipa is pictured unmistakably as a creator. For instance: "Now I am going to make hills and valleys and little hollows of water." "Then he made the forests . . . then he took clay and made . . . the men. . . . You make the moon as I have made the sun" (J 182). "So Tuchaipa made the world by himself. He made all the people . . . then he made the moon and the sun" (K 236). So whether or not the two sentences which seem to indicate a structural resemblance between the two myths are authentic Diegueño elements or Luiseño glosses, further evidence of unmistakable import indicates that there is no such relationship. While the Luiseño and Mohave accounts are similar, the Luiseño and Diegueño are inherently and vitally dissimilar.

2. *Origin of the Sun*

After the creation of the world, perhaps the most important element is the genesis of the sun. According to the Luiseños, the sun (C,D,E) came by birth from earth-mother. He so amazed the other "children" by his intolerable heat and brightness that earth-mother caught him up and hid him away again for a season — a thing which she has continued to do periodically ever since, to the

great relief of the rest of creation. The Diegueño account (L, and compare J 181 and K 236) says that the creator took clay "and made a round flat object and tossed it up against the sky. It stuck there and made everything light. It is the sun." So in this important detail of the creation narrative we find the Luiseño and Diegueño accounts again in noticeable contrast. The Mohave account (H 313) is somewhat like the Diegueño, in that the sun is created for a definite purpose. Students of the solar "theme" will also observe that the solar "criteria" — intolerable heat, brightness, etc., — so picturesquely present in the Luiseño account (see D and E), are absent from the Diegueño.

3. *Genesis of Mankind*

A reversed situation is found in the relation of the beliefs concerning the creation of man, for in this the Mohave account agrees with that of the Luiseño. People in the Luiseño conception are merely, along with sun, trees, rocks, and animals, children of earth-mother. The Diegueño story (J 182, K 236, L), like the Mohave account, describes the first man as a being made from clay. "Then he took a piece of yellow clay and split it part-way up. That is the way he made man." "He dug in the ground, and took mud, and made of it the men." Father Boscana's Playano version gives a similar account (B 250): "Nocumo . . . created man out of the earth." This account is however but one out of seven, and so does not alter our conclusion concerning the usual or typical Luiseño view. Once more therefore we find the Luiseño and Mohave myths in agreement.

4. *Origin of Culture*

As far as our Luiseño sources deal at all with the origin of culture, they picture all the arts and crafts as being either taught by the culture-hero, Wiyot, or springing spontaneously into the minds of the people at the time of his death and in connection with his funeral rites (D 55): Wiyot "taught the people"; 56: "he died, and death came into the world"; 58: After the death of Wiyot "they knew how to make the fiestas and sing and dance." E 135: "Before Wiyot died he told them to get together and make races"; 60: "he told the people that they must take the small bones of the

(deer's) leg for awls with which to make baskets. This was the beginning of basket making." C 185: Then Wiyot "taught them how to make baskets, ollas, redas, and all their arts." The culture myth is not, however, in any degree particularized. The two early accounts (Boscana's) picture Wiyot as an actual earthly tyrant or despot. It is rather evident however that this peculiar view comes from Boscana's own misconception as a churchman and a subjective view of the Indian hero's real function in mythology. The Mohave account seems to resemble the Luiseño version closely in outline, with differences only in the proper names concerned. Their myth seems however to be more systematic and detailed.

According to the Diegueño view, though their account is itself inconsistent, culture came originally from two sources. A great snake, Maihaiowit (see L), living in a house out on the ocean, had all the arts and crafts inside of himself. He was invited by the people to the shore and into a house. There on account of their sudden terror at his immense size he was cremated by them. When the fire touched him he burst or exploded and all the culture came flying out. Certain of the Diegueño religious ceremonies however are described in the "Chaup" story as originating in another manner (see M, N). In regard to this fourth "theme," therefore, the Luiseño and Mohave accounts are similar, except in the matter of names, while the Diegueño account is different from both.

5. *Advent of Death*

Few if any of the sources give detailed descriptions of the manner in which death came into the world. Enough of them mention it, however, to show that it is an inherent part or element in southern California creation mythology. In the Luiseño version universal death follows as the result of the death of Wiyot. (D 58: "For when they found that death had come into the world they did not know what to do." D 59: Wiyot "called the people about him and told them that he was the one who had made death." E 137: "There was no death before this time." F 146: "He thought he would go north to get away from death, as he found there was going to be death after Wiyot died.") The Mohave myth seems to be silent on the point. One Diegueño version (J 183) gives an elabo-

rate treatment of the theme: Fly, at a time when all were debating on the choice they had of dying for good, dying for a time and returning, or living forever without dying at all, rashly counseled the former. So now everything must die forever.[1] This feature seems to set the Diegueño story off from the Luiseño and Mohave myths.

6. *Culture-hero*

As suggested already, the culture-hero of the Luiseño, so far as they have any, is Wiyot. One account (F 145) says that Tukmit, the sky, divided the people into "tribes," or races, and gave them their religion. This is more than likely an individual variation. The lack in this connection of concrete detail concerning the actions of the culture-hero is matched by a tendency in Boscana to ascribe some of the culture-hero episodes to Chungichnish, or "Chinigchinich," almost a deity among the Luiseños, who seems however in the modern accounts to be felt only vaguely as a person. In all the versions except the one mentioned in which Tukmit usurps his place, Wiyot is a semi-divine teacher. The Mohave parallel to Wiyot is the two characters Matevilye and Mastamho. These are Earth-born semi-divine heroes who divide between them the incidents characteristic of the Luiseño Wiyot. The younger, like Wiyot, leads the people in certain primeval migrations, separates them into nations, and in several respects fills the place of a culture-hero (H 316, cf. G 313). Matevilye, the elder, came to his death, once more like Wiyot, through the machinations of the Frog, whom he had offended. At his cremation, as in the story of Wiyot, Coyote leaps up and eats his heart. These and other resemblances make it obvious that the Luiseño and Mohave narratives have more than a merely external similarity.

Among the Diegueño the origin of culture is associated, as we have seen, with the arrival of a great snake, Diegueño Maihaiowit, Mohave Humasereha, from the ocean. There is no further similarity in the stories. The Diegueño moreover have no character that will at all compare with the Mohave Matevilye and Mastamho, nor the Luiseño Wiyot. In their Chaup story, which to a certain extent deals with origins, they have like the Mohave two "gods"

[1] This is of course a favorite theme in all myths concerning the origin of death. Cf. Dr A. L. Kroeber in *Journ. Amer. Folk-lore*, 1908, XXI, 227.

or heroes, but the incidents associated with them find no parallel in the Luiseño or Mohave stories. Once more therefore we find the Mohave and Luiseño accounts manifesting a relationship or at least a similarity, which is in no apparent degree shared by that of the Diegueño.

7. *Death of the Culture-hero*

As pointed out by Dr Kroeber (*Journ. Am. Folk-lore*, 1908, XXI, 225), the death of the culture-hero is a fundamental and typical motive in southern California mythology. The episode is described in almost similar words in six (A, C, D, E, F, G) out of the seven Luiseño, in the Mohave (H), and in one of the three Diegueño accounts (J). It has already been outlined.

In several elements, however, the typical Diegueño version, in spite of external resemblances, is intrinsically different from the Luiseño and Mohave accounts. In the first place, the incident in the Diegueño account mentioned (J), is described as having occurred to *Tuchaipa the creator*. He does not in name or attributes correspond to Wiyot. In the second place, the Diegueño account lacks the point of the whole story, in that the hero of the incident does not return after death as the moon, Moila. In fact the moon is distinctly mentioned as being present before the death of Tuchaipa. The incident of the poisoning is also differently described. In the Luiseño version Wiyot notices Frog, a woman, in bathing, and remarks that her back is flat and shapeless like a frog's. In anger Frog determines to poison him. In the Diegueño version the laughter of the people who were looking on at a race between Frog and Rabbit caused the former's anger. Since the entire frog episode is missing in the other two versions of the Diegueño myth, and since the version which possesses it shows these dissimilarities to the typical Luiseño account, and, most important of all, since the narrative in question was obtained at Mesa Grande, within a stone's throw almost of Luiseño influence, we may perhaps regard it as neither intrinsically Luiseño nor Diegueño, but a rather illogical combination of elements from both myths. The real Diegueño view is in that case represented by the two Chaup myths of Miss DuBois, in which the hero is metamorphosed into Ball-lightning. This is the view held by the present writer, that the Luiseño and

Mohave accounts are similar to each other, while the Diegueño in this regard is quite distinct from them.

8. *Apotheosis of the Culture-hero*

In the matter of a change or alteration in the outward or bodily form of the culture-hero, when his career on earth is finished, all three myths show a striking parallelism. It is perhaps characteristic of the usual culture-hero myth that the hero undergoes some metamorphosis or apotheosis. The Luiseño adaption of the theme has led to one of the curious indentifications of which all religious literatures are full. The similarity of Wiyot's return after death as the moon, to the Christian doctrine of the resurrection, leads the Luiseño to identify Wiyot with Christ. The other two mythologies under discussion are like the Luiseño in this, that the culture-hero in each one is transformed into some local natural phenomenon. The Diegueño culture-hero becomes Chaup, the electric fire-ball,[1] while the Mohave Mastamho (H 316) undergoes a picturesque transformation into the Fish Eagle.[2]

9. *Rascal Disposition of Coyote*

Enough has already been said in connection with the death of the culture-hero to indicate the "marplot" part which Coyote plays in that episode. This is interesting particularly because Coyote occurs widely in California mythology as a "marplot." This theme is unmistakably typical of both the Luiseño (see A 245, D 55, E 132, F 145, and G 314) and Mohave (H) accounts, and if our hypothesis concerning source J is true, is absent from the Diegueño account. Although negative evidence is not conclusive, especially in the present case, the fact that mention of Coyote is made only once in Diegueño mythology as so far known, in a passage of composite origin, must be considered rather significant.

[1] The Diegueño story of Chaup, or Cuyahomarr, is not to be confused with the absurdly-named "cannibal meteor" story locally current among the northern Luiseños (see A. L. Kroeber, *Journ. Amer. Folk-lore*, 1906, XIX, 316, and compare with this a fanciful rendition by G. Wharton James, ibid., 1903, XVI, 153). The myths refer to the same phenomenon, but are not identical.

[2] The eagle is a ceremonial bird among the Luiseños, Diegueños, and Mohave. See L, also G 313.

10. *Migration of Mankind*

In the Diegueño myth concerning origins mankind is created at a mountain called Wikami (L), apparently the same, both etymologically and geographically, as the Mohave Avikwame. From that mountain the tribes according to both myths separated after building a "house" and spread over the world. The Mohave myth pictures a migration prior to the separation at Avikwame, which bears a strong resemblance to the Luiseño migrations under Wiyot (C 53, E 132, G 313). The Diegueño have also certain brief migration traditions, but they are localized in various families[1] and do not at all correspond to this Mohave-Luiseño story of a general migratory stage in the history of human kind. We have a rather unique condition then, in that there is a structural relationship in the names concerned between the Mohave and the Diegueño accounts, but a relation of the story elements between the Mohave and the Luiseño.

11. *Transformation into Animals out of the Human Type*

In all the Luiseño accounts quoted we find the familiar belief that animals were at one time people like ourselves. For instance: "So the four of them . . . people, but later the frog, the earthworm, the gopher, and a water animal resembling the gopher, combined to destroy him" (D 55). "So the rattlesnake, then a man, searched" (loc. cit.). "So they (the people) turned into different kinds of animals and different kinds of grain and all the things we have now in the world." The Diegueño account is still more picturesque in describing a similarly general transformation (see *Jour. Amer. Folk-lore*, 1906, XIX, 161). The Mohave account, however, so far as our outline indicates, wholly lacks this theme. In this instance therefore the Luiseño and Diegueño accounts are similar.

12. *Reversal in Primeval Times of Well-known Conditions*

While not so prominent in the Mission group as in some other mythologies, this theme is nevertheless fairly well defined. Outside of the fact just mentioned (the transformation into animals), we find that the earth used to be the universal food (A 245, B 252, D 53, etc.); dry land used to be small, and had to be stretched to

[1] As the La Chapa family at Manzanita.

accommodate the people (A 244, D 54); people all had the same language (G 313). The Diegueños say that the rocks in primeval times were soft, so that wherever the people stepped, they left hollows in the bowlders. So also the animals and plants used to be without markings, but were marked by "Chaup" (*Journ. Amer. Folk-lore*, 1906, XIX, 161). The theme does not appear to be emphasized in the Mohave accounts.

13. *Sexual Relations between Brother and Sister*

This has been named as a rather distinctive theme in some mythologies, and it may be well therefore to mention that it is present in the Luiseño and Mohave accounts in the relation between Sky and his sister Earth. To all appearance the theme is foreign to the Diegueño account. In this final regard therefore the Luiseño and Mohave accounts are similar.

Viewed in tabular form, the results of the foregoing study are as follows:

THEME	A—SOURCES IN AGREEMENT	B—SOURCES IN CONTRAST TO "A"	C—SOURCES WHICH ARE SILENT
1. Origin of the *Mundus*	*Luiseño* A B C D E F G *Mohave* H	*Luiseño* B *Diegueño* J K L	
2. Origin of the Sun	*Diegueño* J K L *Mohave* H *Luiseño* F	*Luiseño* C D E	*Luiseño* A B C
3. Genesis of Mankind	*Luiseño* A B C D E F G *Mohave* H	*Luiseño* B *Diegueño* J K L	
4. Origin of Culture	*Luiseño* (A B) C D E *Mohave* H	*Diegueño* J K L	*Luiseño* F
5. Origin of Death	*Luiseño* C D E F	*Diegueño* J	*Luiseño* A B G *Diegueño* K L *Mohave* H
6. Culture-hero	*Luiseño* (A B)[1] C D E G *Mohave* H	*Luiseño* F *Diegueño* J L M N	*Diegueño* K *Luiseño* (A B)
7. Death of the Culture-hero	*Luiseño* A B C D E F G *Diegueño* J *Mohave* H		*Luiseño* B *Diegueño* K L
8. Apothesis of the Culture hero	*Luiseño* C D E F G *Diegueño* M N *Mohave* H	*Luiseño* A B	

[1] See under "Origin of Culture."

Theme	A—Sources in Agreement	B—Sources in Contrast to "A"	C—Sources which are Silent
9. Rascal Nature of Coyote	*Luiseño* A B C D E F G *Diegueño* J *Mohave* H		*Luiseño* B *Diegueño* K L
10. Migration of Mankind	*Luiseño* E F G *Mohave* H		*Luiseño* A B *Diegueño* J K L
11. Transformation into Animals from a Human Type	*Luiseño* C D E F G *Diegueño* J L		*Luiseño* A B *Diegueño* K *Mohave* H
12. Reversal in Primeval Times of well-known conditions	*Luiseño* A B D G *Diegueño* J L *Mohave* H		*Luiseño* C *Diegueño* K
13. Sexual Relations between Brother and Sister	*Luiseño* A B C D E F G *Mohave* H		*Luiseño* B *Diegueño* J K L

Briefly, our conclusions from the foregoing table are these:

In the first place, source B, Boscana's second version, differs in respect to ten or eleven out of our thirteen themes from the average Luiseño account. We may consider it roughly ten-thirteenths non-Luiseño. Considered from a purely impressionistic point of view, the account seems to bear more resemblance to the mythologies of the peoples to the north and east than to our other Mission Indian stories. The crowding of the fishes in a narrow ocean, and the fixation of the world by a central rock, "Tosaut," are cases in point. If this supposition is true, the "Chungichnish" portion of the narrative is to be considered a Luiseño addition or a gloss by Boscana himself. In that case the myth itself springs from some source other than the Mission cultures. While nothing definite can be decided, a comparison of all our other Mission stories makes it seem likely that this myth is itself scarcely Mission.

In the second place, a glance at the table shows that the relation between the Mohave and Luiseño accounts is, rather surprisingly, closer than that between the Mohave and Diegueño, though these latter are kindred peoples. That is to say, in nine out of thirteen cases the Luiseño sources agree with the Mohave; while

in only two out of the entire number do the Mohave and Diegueño agree. The resemblance between the Luiseño and Diegueño is really inconsiderable (three out of thirteen elements), since any two mythologies, although totally unrelated, might agree on two or three episodes, especially episodes of the nature of those discussed. It is apparent, therefore, if the conclusions on which we have proceeded are reliable, that there is no inherent relationship between the accounts which the Luiseños and Diegueños give of creation, and a relationship only in the terminology or etymology concerned between the Diegueños and Mohaves. The Luiseño and Mohave accounts on the other hand are clearly related.

CONCLUSION

The bearing of these themes, and our conclusions concerning them on the outstanding literature of the Mission Indian area, are of course quite evident. Accepting our premises as outlined, it becomes apparent that the "versions" and myths so far printed fall into five classes:

I. The Luiseño creation myths. 6 versions, A, C, D, E, F, G
II. The related Mohave creation myth. H (a summary)
III. An independent Diegueño creation myth. (K, L)
IV. The so-called Playano myth (non-Luiseño). B
V. Composite myth (combining I and III).[1] L

The only differences in the above somewhat numerous Luiseño versions are those which arise from the personal factor in the native informant. The Mohave version is almost equally well defined. The precise content of the Diegueño story can be finally decided when other versions have been obtained. Enough is clear, however, to show that in all probability it is thoroughly independent of the other two narratives.

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[1] There is some evidence to indicate that this myth is localized in the border region about Mesa Grande.

EXCAVATION OF EARTH-LODGE RUINS IN EASTERN NEBRASKA

By ROBERT F. GILDER

With a Report on the Skeletal Remains by Aleš Hrdlička

The Ruins in General

ANNOUNCEMENT was made by the writer in this journal for January-March, 1908, of the supposed rediscovery of an Oto village north of the mouth of Platte river, in the valley of the Missouri, mentioned by Lewis and Clark, Major S. H. Long, and other early explorers of the Missouri river. After ten months' exploration of house ruins and tumuli in the area of the village, the writer has found an apparent affiliation between the method of house construction and the artifacts of this village, and many other circular house ruins, locally known as "buffalo wallows," scattered with little order along the left bank of the Missouri from the mouth of the Platte to the northern line of Washington county, Nebraska, a distance of approximately fifty miles.

Careful exploration in and a long study of the ruin of one house within the area of the supposed Oto village has determined positively that it differed materially from others near it. Its probable original construction was the writer's chief study, and the large and varied collection of artifacts secured was of secondary importance. The details of probable original construction, carefully noted throughout the entire work, were observed particularly at the suggestion of Dr Clark Wissler, of the American Museum of Natural History.

My associates during the labor of exploration, always voluntary, were Samuel P. Hughes, John B. Gallatin, J. E. Wallace, H. Jewell, Rev. R. W. Livers, and Everard Childs, the last a son of the owner of the property, Mr Lowrey Childs, into whose possession the objects found in the ruins have been given and where they will be available for study.

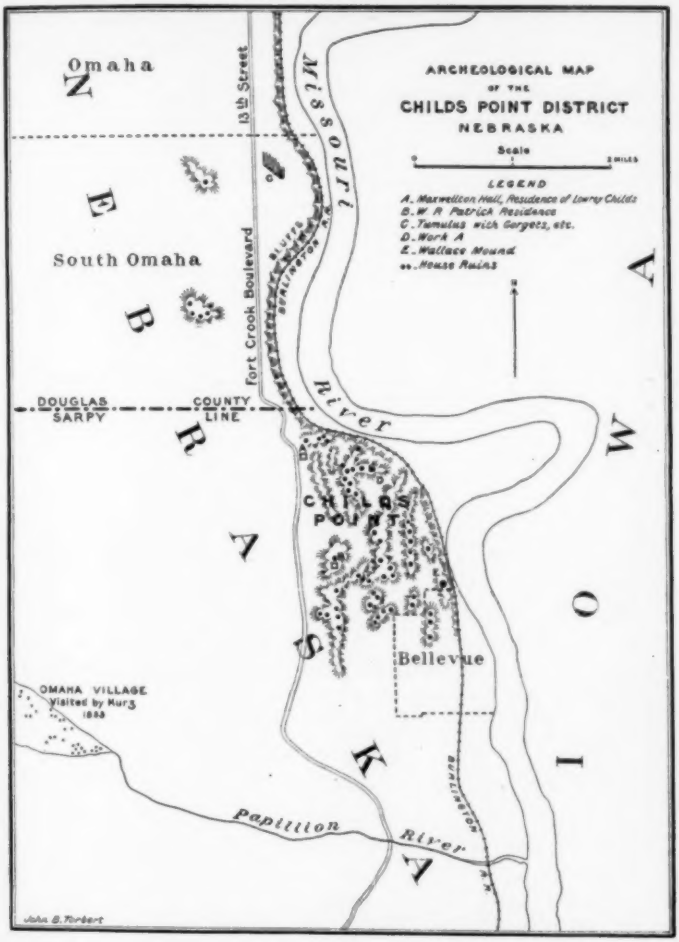


FIG. 1.

The ruin first explored is situated at the summit of a high and narrow ridge extending eastward almost at a right angle with the river bluffs nearly a mile from their north-south line, at a point

where the Nebraska and Iowa hills are separated by a distance of four miles. On the surface the ruin was similar to that of Work No. 1, Ponca Creek district, previously described by the writer,[1] with the exception that it was sixty feet in diameter, measured from the outside of the rim, and deeper by nearly four feet in the center of the depression.

The work of excavation was begun on the western side of the ruin, five feet from its rim. A ditch six feet wide, and deeper by one foot or more than the house floor, was carried southeastward and around the outer base-line of the floor for four-fifths of its circumference. This would have been a complete circle six feet wide but for a linden tree, sixteen inches in diameter, which grows five feet inside the rim in the northwestern portion, compelling a narrowing of the ditch that the tree might be preserved. A detailed description of the work of exploration would be but a repetition of that of Work No. 1, Ponca Creek district, and is therefore omitted. For the purposes of this paper it may be here stated that the earth inside a circle fifty feet in diameter to a depth of five to ten feet was thoroughly examined.

In all house ruins similar to the one here described, the main fireplace, four to five feet in diameter, is situated near the exact center. From this fireplace the floor extends, nearly flat, to within ten feet of the extreme outer edge or periphery of the ruin. Here a platform, or step, twelve to fourteen inches high and almost vertical, rose from the floor and sloped rather sharply to the outer rim (fig. 2, *a*). On the southeastern side of the ruin a ditch was dug through this platform to the extreme outer edge, the sides of which gave the exact angle of the slope.

Around the line of the inner circumference of the platform, at distances of approximately five feet, the remains of posts six or seven inches in diameter were discovered. These were either in the form of charcoal or of wood dust. Sometimes bowlders lay about the remains of the posts, as if designed to aid in holding them in position. The grain of the charcoal posts indicated the wood to have been oak. About the posts, under the floor, and also under the platform, objects were more numerous than at other points in

[1] *American Anthropologist*, October–December, 1907.

the ruin. The charred remains of four posts about eight feet apart surrounded the central fireplace.

There were two features of house construction that stand out conspicuously: (1) the floor was approximately six to eight feet lower than the level of the surrounding ridge; (2) the angle at which the slabs, logs, or palings probably leaned inward from the periphery seems to indicate the highest part of the roof at about the same distance above the surrounding level as the floor was below, making the highest part of the roof about fifteen feet above the fireplace in the center of the dwelling.

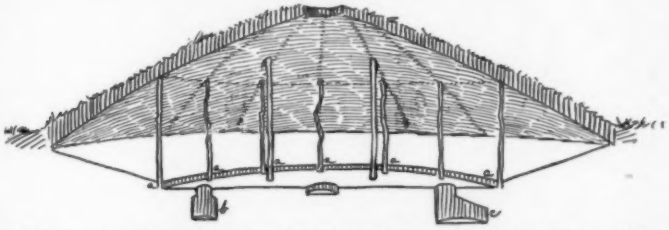


FIG. 2. — Section showing floor, platform, fireplace, position of posts, and probable arrangement of roof. (*a*, elevated "step"; *b*, *c*, caches.)

A prism cut from a section of the ruin half-way between the inner edge of the platform and the fireplace, shows twenty inches of vegetal mold, thirty inches of roof-covering, and about twelve inches of earth constituting the floor. The floor was a distinctive feature. It appeared to be composed of packed or rammed clay through which were mixed ashes and flakes of charcoal in great profusion. This clayey appearance differs from the loess with which the roof was covered, being darker and very compact.

Little besides broken flint implements, flint chips, shells, potsherds, and fractured drift bowlders were found upon the floor itself; the major number of objects was beneath the floor surface, very often covered with bowlders, as if the latter had been placed to mark the spot. Small fireplaces were of frequent occurrence on all parts of the floor.

Three caches were found in the first ruin, which for convenience will be designated as Work A. In one, fifteen feet west of the

center of the dwelling (fig. 3, *a*), were found flint blades, a score of Unio shells, a mano or muller made from a rounded drift bowlder, its lower or grinding edges beveled, probably from contact with the sides of the mortar, and a pottery pipe in form of a soaring bird. The mortar itself was not found, although careful search was made for it throughout the ruin. Five broken metates, however, were found. The bottom of this cache was six feet from the surface.

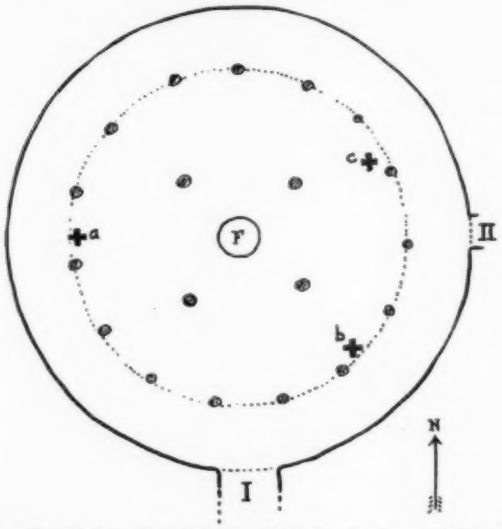


FIG. 3. — Ground-plan of earth lodge, Work A. (*a*, *b*, *c*, position of the three caches. I, II, the entrances. The small hatched circles are posts. The inner circle is the step or inner edge of the platform. *F*, fireplace. The outer circle is the periphery of the ruin.)

The second cache lay at the southeastern side of the ruin (fig. 3, *b*). Its bottom was eight feet from the surface of the ground. It contained thirty shells, several large flint blades, other large flint implements of unknown use, one of which closely resembles a spokeshave, animal bones, projectile points, and a small piece of galena.

The third cache, in the northeastern part of the ruin, was the

largest and deepest of the three, its bottom being nine feet and a half from the surface (fig. 3, *c*). On a small shelf, or niche, at its eastern side, two feet from the bottom, lay a small image of a human face carved from pink soapstone, a number of animal bones and skulls, fish bones and scales, and Unio shells.

So many and varied were the objects found in the ruin, so abundant the charred sticks and grasses, that the impression is conveyed that the dwelling had been abandoned in haste and that it had burned to the ground, as stone required in implement making, with the exception of quartzite and granite drift bowlders, is not found in this vicinity.

All of the ruins of the type here described are accompanied by refuse heaps covered with nearly two feet of vegetal mold and sandy earth containing potsherds, broken flint implements, flint chips, and, some of them, broken shells. No animal bones have yet been found. These refuse heaps usually occur twenty-five to fifty feet to the right of the southern entrance of the dwelling.

The situation of the house ruins on Childs Point — as the land on which the village is locally known — seems a feature of their variation. From the city of Omaha, four miles north, Childs Point extends in what seems in the distance to be an unbroken line eastward out into the river-bottoms at an elevation of about two hundred feet; but instead of being an unbroken point of land, it is in reality composed of a succession of heavily-wooded parallel ridges extending north and south with deep cañons between them. Occasionally a ridge extends east and west, and it is on one of the latter, which covers an area of about four acres, that Work A is situated (fig. 1). At its western end it is joined by another ridge extending southward. Eight ruins are situated on these two ridges, five on the former and three on the latter. One of the former ruins on the western end of the ridge, sixty feet in diameter, is joined at the southwest by a smaller ruin twenty feet in diameter. Excavation in the center of the smaller ruin determined that it was not a cache similar to the caches made by the Omaha. An ash-bed nearly two feet in thickness indicated long occupancy. (See fig. 4.)

A dozen feet south of these two ruins are five long and narrow mounds, extending east and west, two to three feet higher than the

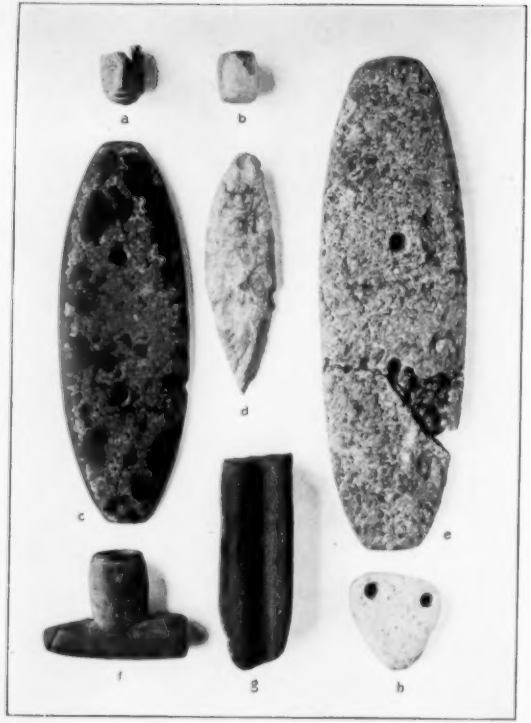
surrounding level. They are seventy-five feet long by twenty-five wide, placed end to end, with depressions several feet wide between each. The writer was compelled to pass these mounds twice each week for three months in order to reach Work A, and became convinced that their similarity and extent was due to their having been erected as a continuous wall or breastwork. When opportunity presented, a trench was dug across one of the mounds, and another, east and west, crossed the first at right angles. At the juncture of the two trenches, two feet from the surface, a bone fish-hook of singular pattern was found (pl. 1, 2, *e*). This implement has a flattened elbow and is supplied with notches on the elbow's outer curve.

FIG. 4. — Earth lodge ruins. The figure stands in the center of the large ruin. Small ruin at the extreme right.

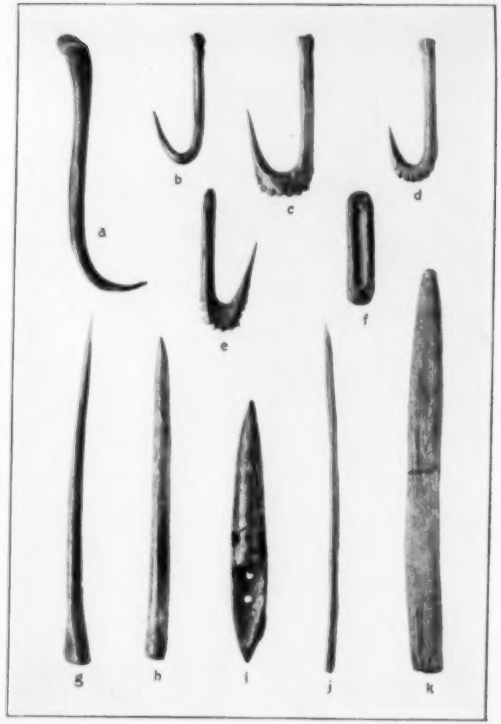
An inch or two below the fish-hook was a bone bodkin, and two feet still lower down, lying on what appeared to be the top of the hill, was a human skull and, to the eastward thereof, some of the long-bones of the skeleton. The frontal bone is wanting, but the mandible, maxilla, frontal processes of maxilla, and zygomatic arch were with the other parts of the skull. Such of these bones as were recovered were sent to the United States National Museum for examination by Dr Hrdlička.[1]

Five feet east of the north-south trench, and on the same level

[1] See specimen 251,893 in the accompanying report by Dr Hrdlička, page 80.



1. *a*, Sculptured head of pink soapstone; *b*, Quartz bead; *c*, *e*, Gorgets; *d*, Four-bladed flint knife; *f*, Soapstone pipe; *g*, Arrowshaft smoother; *h*, Stone pendant.



2. *a–e*, Bone fish-hooks; *f*, Bone buckle; *g*, *h*, *j*, Bone needles; *i*, Antler object, possibly for weaving nets; *k*, Antler object of unknown use.

STONE AND BONE OBJECTS FROM NEBRASKA

as the bones, was an ash-bed four feet in irregular diameter and three inches in thickness. The mound was composed of alternate layers, six to eight inches thick, of light sandy loess and darker soil. It contained broken drift spalls, calcined granitic rock, pumice, pot-sherds, and shells. The ware is similar to that from Work A, and several decorated pot-rims bear precisely the same designs as those from the latter ruin.

The extent of the nearest ruins leads to the belief that most of the earth forming the mounds was taken from them at the time of the building of the lodges and was deposited as a fortification or wall of some kind which was used afterward as a sepulcher. Three hundred yards south of these earthworks, on the ridge extending in that direction, the writer opened a low tumulus in which were the calcined bones of three human skeletons, all of which were much deteriorated. The bones lay, without apparent order, beneath large slabs of limestone, covered with three feet of earth. Such of the bone fragments as could be removed were sent to Dr Hrdlička for examination.

One mile south of Work A someone had dug three short trenches in the ruin of an earth lodge similar to that of Work A. Examination gave assurance that no cache had been found. The writer extended one of the trenches on the western side of the ruin to within eight feet of its rim, and at a depth of six feet from the surface found a cache from which four-hundred objects of antler, bone, pottery, shell, and stone were obtained, including a head made of burnt clay, and a bead formed from a quartz pebble ground down to shape and drilled through from both ends. The bead is an inch in length and half an inch in diameter (pl. I, I, *b*). Other objects of interest are large and small "hoes" formed from the scapulæ of bison, elk, and smaller animals; punches, needles, fish-hooks (plain and notched at elbow), all of bone; pot-lugs; paint-pots and rims; a ground diorite celt; whole and broken pottery pipes; a fish carved from a shell and probably used as a pendant; bone beads (pl. III, I, *f*), antler objects of unknown use; arrowshaft smoothers; drills; projectile points and flint knives; blades and scrapers; small piles of unworked flint; bone hide-grainers, finished and unfinished—the entire lot comparing favorably

with the objects from Work A. A second cache, five feet northeast of the first, was empty with the exception of animal bones and a quantity of fish spines and scales. The bottom of each cache was eight feet from the surface and four feet below the floor of the house. At the time frost stopped further work six caches had been found in this ruin.

A mile still farther south, and beyond a deep valley which cuts the north-south ridges, a large number of earth-lodge ruins are found, associated with scores of mounds more pronounced than any others of the neighborhood. None of these has been explored. Excavation in two shallow house ruins proved them to be of other origin than those described. No stone implements, sherds, or caches were found. Nearly the entire surface of a bench covering possibly five acres[1] is pitted with excavations from two to six feet deep. These holes were made by relic-hunters. Inquiry as to their origin elicited the information that they were made by a regiment of United States Infantry which, twenty years ago, was encamped near there during rifle practice. The soldiers had explored the old "burying ground" for "relics," consisting mostly of old Spanish coins dating back to the Fourteenth Century, with copper pots and other utensils. Although the writer has never seen any of these "relics," former members of the regiment camped near the burial ground, now living in Omaha, have informed him that the coins were so plentiful that the soldiers used them for poker-chips.

The writer is satisfied that the graves containing the copper "relics" were not those of the Omaha tribe, as is generally supposed, but probably of the Oto, and that the village, described by early explorers as having been long abandoned when they saw its ruins, occupied the bench which undoubtedly extended over many acres before cut away by the Missouri, which is doing the same thing every spring today, near where these graves were situated. This cemetery occupies the northern extension of a river bench a mile north of the railroad station at Bellevue. Between the two points I have found flint implements and have seen the remains of

[1] This bench must have been considerably larger prior to the encroachment of the Missouri river and the grade of the Burlington Railway skirting the foot of the present line of bluffs one hundred and fifty feet lower down than the two last ruins mentioned, and fifty feet above the river level.

lodge-fires where erosion has cut the surface. All evidence tends to place the arrival and occupancy of the Oto in the area described as much more recent than the people who occupied only the highest ridges of the same neighborhood and who buried their dead beside their homes.

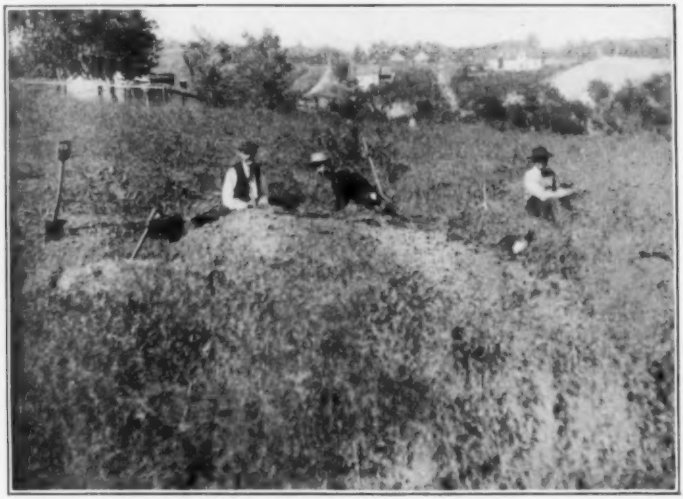


FIG. 5. — Excavating in ruins at 17th and P streets, South Omaha, Nebraska.

North of Childs Point one fails to find house ruins until well within the limits of the city of South Omaha, in Douglas county. Whether long cultivation of the soil has obliterated the ruins cannot be determined. Tumuli, however, occur almost at intervals of a hundred yards the entire distance between Childs Point and the city of Omaha. Two miles north and west of Work A, at about what would be the junction of Seventeenth and P streets (fig. 5), South Omaha, surrounded on three sides by city residences, are four house ruins situated on the summit of a hill that has been used by boys of the vicinity as a baseball ground. Within the field is a large ruin which the players have partly filled with earth. The depression still retains water, and when first seen by the writer ducks

were swimming in it. A hundred yards to the east of this ruin are two others, one of which was explored by Mr J. E. Wallace, one of my associates. A cache was found ten feet west of the center, the bottom of which was seven feet from the surface of the ground. It contained very finely made and polished bone implements, and sherds of a very poor quality of pottery, some of which appear as if they had been exposed to the elements before being covered in the ruins. Other sherds were well burned. An object of much interest consists of the fragments of about three quarters of an unburned pot about the size of a teacup.

A few days after work was begun, the writer and his associates commenced extensive exploration of the ruin. Three feet north of the first cache was another, of the same depth as the first. It contained several beautifully made projectile-points and knives made from agate and jasper recognizable as material from the "Spanish diggings" of Wyoming; a bone fish-hook, four inches long, slightly curved, and tempered and polished; a small bone object, not thicker than the lead in an ordinary pencil, about an inch long, sharpened at one end and with two incised lines encircling the opposite end; many scrapers of ordinary form; a bone pendant, or bracelet, an inch by three inches in rectangular dimensions, partly curved, drilled through at each corner of one end, and shaved down to the twenty-second of an inch; lumps of potters' clay mixed with powdered granite, others mixed with lime and volcanic ash. On a narrow ledge a foot above the bottom of the cache was a crude pottery head, representing a person of low forehead and with prominent nose. Pieces of quartz and drift spalls lay near the bottom, in the earth filling the cache and on the house floor. A fine chipped flint celt, and ungrooved hammerstones of the commoner kind, pitted on one side, were also found. In all some two hundred objects were recovered, which, with the exception of some of the pottery, compare favorably with the objects from Work A at Childs Point. Several pieces of red hematite, yellow ocher, and pumice were also found in the ruin.

Near the junction of Poppleton avenue and Twenty-fourth street, Omaha, surrounded on all sides by city residences, are four circular house ruins. A brick-making plant, using loess in its man-

The crosses show the line of the lodge floor and the face of the loess section discolored by rain washing the charcoal on the floor.

EARTH-LODGE RUIN IN OMAHA, NEBRASKA

ufacture, has cut through the eastern third of the largest ruin, and its floor shows as a saucer-shaped line of charcoal and dark earth. The vertical step or platform noted in Work A, Childs Point, is wanting. Exploration has shown flint implements and chips, together with potsherds with a binder and appearance differing from any others of this section. The ruins are shallower than many others noted, and occur but half-way to the summit of a high hill (pl. II).

Half a mile nearer the river bluffs than the four ruins mentioned, on a hill overlooking the river valley and surrounded by homes of Omaha residents, graders have exposed a section of an earth-lodge ruin. The floor is four and a half feet from the surface. The bases of the outer row of posts, burned to charcoal, are exposed and show the wood to have been oak. Implements and sherds identical with those from Childs Point and South Omaha have been found there by my associates.

The surface of an ancient earth-lodge ruin of the kind explored by the writer naturally drains moisture toward its center. Even after heavy rains of a week or more, away from the center the earth near the floor is dry and extremely compact. All the ruins explored are situated on high ridges, with deep valleys between, thus assuring good drainage and explaining why bones are found in good condition, although probably of considerable age.

Today there remain of the forest primeval which covered Childs Point many large oak and walnut trees, some of which are three to four feet in diameter. The other timber is mostly of second growth. One of the oaks, six feet nine inches in circumference, grows from the rim of an earth-lodge ruin. With primitive picks of antler, bone hoes, and stone axes, could it have been possible for the Indian to excavate great holes in the ground, eight to fourteen feet in depth and ninety feet in diameter, if forest trees had covered the ridges at the time the lodges were erected? The explorer with modern steel tools today finds it difficult to excavate in moved earth interlaced with masses of great roots and containing tree-stumps, and he has therefore come to the same conclusion he reached in the exploration of the Ponca Creek district, namely, that at the time these dwellings were erected the ridges were bare of timber and an extensive view could be had from their summits.

The vegetal mold covering the ruins is partially composed of wind-blown sand from the river bars, and it seems probable that the hills were formed in the same manner. Whatever deduction is made concerning the possible age of these dwellings must take into consideration the eighteen to twenty-four inches of vegetal mold, which, where trees and grasses are exposed to fire, and where even at this day the forest is sometimes ravaged by flames, must necessarily be of slow formation. The problem is one of geology; and without positive knowledge of what people erected these lodges, geology must approximate the time which must have elapsed while the vegetal mold was forming.

The circular ruins similar to those explored by the writer are seldom found far from the rugged hills bordering the Missouri river, the highway connecting the warmer regions of the south and the north Pacific coast. They seem to have been erected with little attempt at tribal formation, and vary in size from thirty to ninety feet in diameter and from one to nine feet in depth at the center at this day, the floor being four to five feet lower. The larger ruins in the Childs Point district average five to six feet deep on the present surface. A feature of the largest ruins is a graded entrance, opening to the south, from thirty to fifty feet in length and paralelled on each side by small ridges of earth sometimes three feet high but becoming lower at the farthest point from the house ruin. It is probable that these long entrances were covered with the same material and in like manner as the lodge. The average ruin, including Work A, has two entrances, one at the south and the other at the east. In Work A it was noted that the step, or platform, ceased in front of the entrances to the extent of the distance between two of the outer posts.

In summing up the results of exploration of the earth-lodge ruins in this section of the Missouri valley it must be noted that there is more than one kind of aboriginal habitation in a given area. One probably antedates the invasion of white people, while the other appears to have existed at the time of the coming of the whites. Whoever the builders of these ancient habitations may have been, it seems reasonable to credit them with the construction of a style of dwelling which was probably cool in summer and

warm in winter, able to withstand the tornadoes which even at the present day are too numerous and too severe for comfort, as the writer experienced during his spring work. It also seems reasonable to give these aboriginal builders the credit of being the originators of the celebrated Nebraska sod-house.

Implements, Utensils, and Ornaments

Stone Objects. — No spear-points have been found in any of the ruins explored by me or my associates, but arrowpoints, both with and without notches, are plentiful. Both types are generally well formed. They are usually found about the outer circle of the roof supports and in the caches.

Scrapers show the usual forms, but those of the longer-than-broad type prevail.

Cutting edges, showing one or more blades, appear to have been made of odds and ends of flint formed from rejects and of chips left from working other implements.

Diamond-shaped flint knives are numerous. These have four cutting blades and are well made (pl. 1, 1, *d*).

In at least two ruins small caches or deposits of flint had been laid in some order, the smaller pieces below covered by larger pieces as if for safe-keeping and where they could be found when occasion required for making into implements.

a *b*

Fig. 6. — (*a*) Polished diorite and (*b*) chipped flint celts.

Two ground celts only were found; five others were of chipped flint (fig. 6, *b*). One of the former, finely made and still retaining a good cutting edge, is of diorite (fig. 6, *a*), the other is of granite. The latter appears to be very old and much weathered, probably from exposure to the elements before being covered by the house ruin. It lay nearly at what had been the top of the roof.

Many arrowshaft smoothers of yellowish Dakota sandstone were found. In all the ruins explored there were found, in addition, rectangular pieces of sandstone which seem to have been used for much the same purpose as sandpaper. The same kind of stone shows that it had probably been used for pointing implements, possibly bone awls or punches, being grooved in many directions.

Coarse red and gray pumice, which floats down the Missouri from well up in North Dakota, found in all the ruins and tumuli, also shows surfaces which suggest use as smoothing stones.

Calcined granitic rock, pink Sioux quartzite, and round drift pebbles the size of one's fist and smaller, all of which show marks of fire, are found in numbers on the floor surface and in all caches. The latter may have been used in heating water.

Shell Objects. — One small oblong piece of shell, worked down to shape, shows deeply incised lines following its longest diameter (pl. III, 1, *l*), while others have notches on the outer edge (pl. III, 1, *b*, *j*).

A rectangular piece of shell, with holes drilled in two corners.

A fish cut from a heavy Unio is carved in excellent form, with square tail and three fins. A hole drilled through the back from both sides suggests use as a pendant (pl. III, 1, *g*).

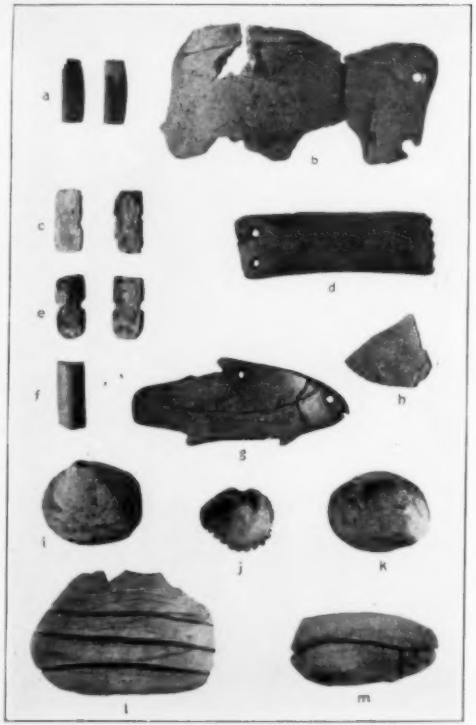
One scraper-shaped shell was found; its use is problematical.

More than a score of shell spoons (?), with edges beveled at right angles to the grain of the shell, were found; and small Unios show a slot cut through at the hinge (pl. III, 1, *i*, *k*).

Pottery. — A large part of the pottery found in the caches and through the ruins is of excellent ware. No whole pot was found. In some instances the rims of two or more pots were found together in a pile. Much of the pottery was unearthed near what had been the roof of the lodge — as if it lay on the roof when the house fell in. Most of the vessels must have been provided with stout lugs, both ornamented and plain (pl. III, 2).

In many of the ruins balls of unbaked clay mixed with granitic binder, and others mixed with lime and sometimes with volcanic ash, were found. These, when not in caches, occurred near the remains of small fireplaces on the house floor.

Several small pots, some of which have been used as pain



1. *a*, Beaver-tooth pendants; *b*, Bone anklet; *c*, *e*, Shell pendants; *d*, Section of bone bracelet (?); *f*, Bone bead; *g*, Shell pendant; *h*–*m*, Shell ornaments and pendants.

2. Potsherds from cache pits.

BONE AND SHELL ORNAMENTS, AND POTTERY

receptacles, their inner surfaces being still thickly coated with vermilion or Indian red, were found almost entire. The color is easily rubbed off when moistened. Small pieces of undecorated rims and sherds, never large pieces, show a fine ware burned to a deep orange-red. The color runs entirely through the pottery. It was not met with in all the ruins, but was found in most of those explored on and near Childs Point. The commoner pottery shows a dull reddish exterior surface, while the interior is of light or dark bluish-gray.

Pottery Pipes. — In all, seven pottery pipes were recovered, five of them nearly perfect. A pipe from Work A is in the form of a soaring bird, feathers being represented by incised lines across both sides of the wings, at oblique angles to the body. The breast is well modeled, and the mouthpiece forms the tail of the bird. It is likely a bird's head was attached to the pipe, as the outer or front side of the neck shows a fractured edge (pl. v, 2, *b*). Another pipe is somewhat on the "monitor" model, while two other broken pipes indicate two of the latter sort (pl. v, 2, *d*).

Objects of Bone and Antler. — Complete hoes and fragments formed from the scapulæ of bison, elk, and smaller animals, were of frequent occurrence throughout the ruins explored. The working edge of the blade is beveled and highly polished. Twenty perfect hoes were gathered. Implements formed from small scapulæ were probably used in pottery making; these show a beveled edge reaching to the socket end of the bone and indicate much use. The supposition is that these bone hoes had been hafted, but occasionally one is found which shows a remarkable polish, as if produced by hand abrasion, throughout its length. Near the sharpened

FIG. 7. — Bone hoes.

edge of most of the larger hoes one or two notches have been cut (fig. 7, *a*); these show a wear and polish as if once bound with a thong or cord. One has a small hole drilled through one side opposite a notch on the other side (fig. 7, *b*).

Punches or awls were of frequent occurrence. These are symmetrically formed and highly polished (pl. IV, 1, *i–n*).

Bodkins show a hole at the larger end similar to the steel bodkins in use by whites today. They are skilfully formed and are very thin.

Needles are small in diameter, long and tapering, and still quite sharp (pl. IV, 2, *a–h*, *o–q*).

A pendant, or perhaps a bracelet, made from a bone worked down to about the twenty-second of an inch in thickness, is rectangular in shape, one by three inches, and has a drilled hole in each corner of one end (pl. III, 1, *d*). It is slightly curved.

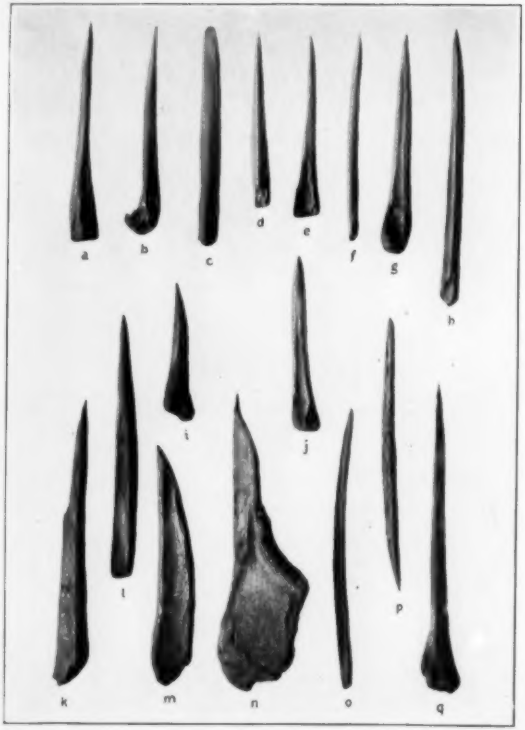
Five fish-hooks were found. One of these is made from a small pointed bone, about four inches long, with one end slightly curved; another is a well-formed plain hook, while the other three are splendidly made and notched on their outer elbow (pl. I, 2, *a–e*).

Five antelope jaws show much use, each having a higher polish than any other of the bone implements. They have been evenly cut and pointed an inch in front of the premolars. Each shows two grooves on the inner surface, which seem to have been made by a thong, suggesting the fastening of a handle on the outer side of the jaw or its envelope by some sort of covering used probably as a handle and lashed in place. Small splinters chipped from the pointed end suggest use in flaking flint implements. All have seen much service. They have been evenly tempered by fire and are still firm in texture (pl. IV, 2, *b*, *d*).

One so-called bone buckle was found (pl. I, 2, *f*).

Deer antlers with side prongs cut away suggest use as picks.

Gouges and grainers were of frequent occurrence. One of the latter shows much use (pl. IV, 2, *c*). Another, made from a similar bone, shows deep incised lines from one end to the other, as if the artisan had commenced to form a grainer; yet it is possible that the pieces intended to be cut out were designed to be worked into needles or other small implements (pl. IV, 2, *a*).



1. Needles and punches.

2 *a*, *c*, Grainers; *b*, *d*, Antelope mandibles, of unknown use; *e*, *f*, Undetermined objects.

BONE OBJECTS

1.—*a*, Bison horn spoon (?); *b*, *f*, "Flint flakers"; *d*, Haft for flint knife (pl. 1, 1 *d*) found with blade inserted in slotted haft; *c*, *e*, Bone objects; *g*, Arrow-shaft straightener.

2.—*a*, *c*, Pottery heads; *b*, *d*, *e*, *f*, *g*, Pottery pipes.

BONE AND HORN IMPLEMENTS AND POTTERY OBJECTS

Bird and coyote bones were numerous in food caches, and fish spines, scales, and vertebræ were likewise common. Other animal bones and skulls found in house ruins have been identified as those of the bison, elk, mule-deer, antelope, squirrel, pocket gopher, and turtle. The skull and bill-core of a member of the heron family were also found.

Objects made from pieces of deer antler, with smoothed and polished surfaces and beveled ends, are of unknown use (see Postscript). Fourteen of these have been found (pl. v, 1, *b*, *f*). They suggest a short handle of some kind, but are neither notched nor grooved.

Another antler object shows skilful workmanship, but its use is not known (pl. 1, 2, *i*).

Still another, six inches in length, is artificially slotted at one end. Two small holes are drilled in two opposite sides, close to one end, and the part between split open, suggesting a haft possibly for small flint blades or cutting edges.

Two objects of antler, hacked and cut by rodents and possibly also with flint blades, might be hafts of some kind.

Pieces of scapulæ, polished to a high degree, may have been used as scrapers. An inch of the surface shows a polish, and it seems likely that the other portion was once covered with something like a piece of dressed hide to protect the hand of the user.

All bone and antler implements show hardening or tempering by fire, marks of which cover portions of their surfaces. Whenever bones other than those which show this tempering were found, or unless encountered well down in cache pits, they were greatly deteriorated.

Caches. — Caches were not built on a uniform plan. Some were slightly funnel-shaped, with the smaller end uppermost (fig. 2, *b*), but most of them were sunk into the earth at such an angle that the cache proper was just beneath the step or inner edge of the platform (fig. 2, *c*). The cache with its entrance was found to be two and a half to three feet deep, and either plastered or rammed, as the walls are still very hard. All the caches were filled with earth other than that in which they were excavated, and in almost every instance ashes covered the entrance in the floor. Sometimes charred grass

shaft straightener.

or reeds indicated a mat-covering. When a cache was located, a deep excavation was made at one side, and the contents thereby exposed in vertical section. The line of earth filling the caches and that of the hill was always strongly marked. Many of the caches were supplied with shelves, or niches, on which often rested the more valued objects (pl. VI).

In one cache a ball of finely grained clay mixed with beeswax was found. Its use is not known.

There were no evidences whatsoever that horses had been used by the house builders.

Sculpture. — Among the objects found in the earth-lodge ruins in the Childs Point district, and in similar earthworks two miles northward in Douglas county, are three sculptures representing human heads. One, from Work A, is of pink soapstone with what may be termed Oriental features. The eyes, made with incised lines, are "almond shaped," with closed lids; the nose is long and flat, and somewhat negroid; the lips are separated, the cheeks and chin are well rounded, and the forehead is high and broad, in good proportion to the remainder of the face. Two square "tabs" take the place of ears, and are similar to those on Egyptian reliefs and outlines. The object bears resemblance to the bowl of a small pipe. Its height is one inch, the diameter half an inch. Two posterior openings show finished edges; one is too small to admit a stem, while the other is rather too large. The interior of the bowl, which has been hollowed out with rude tools, shows no discoloration. An incised line encircles the top near the rim. For whatever purpose the object was designed, it has been carved with great delicacy. The face, which appears to represent that of a sleeping person, is decidedly feminine (pl. I, I, *a*).

Another representation of a human head, showing decidedly masculine features, is made of a poorly burned, reddish-yellow clay with a very coarse binder. A prominent nose, the base of which springs from a low, retreating forehead, is of Indian type, but appears to be a caricature. The mouth is broad, and the chin strong and rather prominent. The eyes are represented by small lumps of clay, raised from the face an eighth of an inch, across which slits show the meeting of the lids. Small squarish pieces represent ears.

CACHE UNDER FLOOR OF EARTH LODGE

The throat is heavy and strong. The whole figure is exceedingly crude (pl. v, 2, *c*).

The third head differs materially from the other two. It is of the same material of which the better sort of pottery is made, and has been burned very hard. With the exception of the flattened posterior, the head exhibits little of any recognized Indian type. The face represents a person laughing, with mouth widely extended and eyes partly closed. The forehead is high and broad, the eyes well modeled and with brows slightly lifted, the nose somewhat aquiline, mouth firm, and chin well rounded. Instead of ears of one piece, three small raised squarish bits of clay, one above the other, give the impression at once of sparse side-whiskers. Examination shows that these were originally one piece, but that they were cut after the head was fired (pl. v, 2, *a*).

Omaha Earth-lodge Ruins

During progress of the work in the Childs Point ruins I digressed long enough to spend part of a day on the farm of Amos Gates. It was here the Omaha lived last before going on a reservation, and where they were visited by the Swiss artist, Kurz. Some of the Kurz sketches, reproduced by Mr Bushnell in the January–March, 1908, issue of the *American Anthropologist*, show outlines of earth-lodges that were sketched on the Gates site at the time. I was anxious to compare the ruins of Omaha lodges with those in which I was working nearer the river. It was found that the ruins were quite shallow and had left but slight depressions, while others left small circular mounds above the surrounding level. The Rock Island Railroad has cut through the village, and at least one cache was exposed from top to bottom — about fifteen feet. In all instances the caches were outside the lodge sites.

The surface yielded fractured iron pots, Delft or figured china of white man's manufacture, and rusty iron objects, besides flint scrapers and chips, potsherds, and the usual accumulations of a village prior to contact with white people. The writer cannot attribute the flint implements to the Omaha, but considers the favorable site on a plateau at the junction of two streams to have been used by another people long before the Omaha erected their lodges there.

Excavations below Childs Point

In the early part of April, 1908, not far from the south property line of the owner of Childs Point, Sarpy county, Nebraska, while ascending a steep ridge parallel to the Missouri river-bottoms, Mr J. E. Wallace, of Omaha, one of the writer's associates in archeological research, chanced upon human bones on the surface of the ground. He excavated near where the bones lay, finding a burial consisting of a very slight elevation on the ridge, two-thirds the distance to its summit. The mound was about forty feet long by fifteen to twenty feet broad. Operations at the southern or highest end of the mound resulted in unearthing ten skulls and a number of skeletal parts.

A few days later the writer assisted in the work and continued until forty crania had been obtained.

Our first work began in the northern or lowest end of the mound, where a rectangular excavation, four by five feet, was made. Fourteen inches from the surface a stratum of skulls and bones, including six of the former, was exposed. The skulls lay with crowns uppermost and faces to the northward. Between and on each side were piles or, more properly, bundles of the longer skeletal parts.

On removing the bones it was observed that many dissociated and fractured calcined bones lay scattered throughout the mound. Some of these calcined bones were as white as chalk, but firm in texture. The parts of the calcined skulls rang like glass when struck with a piece of steel. The action of fire was not noticed on skulls and bones which lay in actual contact with those that had been burned. All the entire skulls were rather soft when first removed, but hardened rapidly on exposure to sun and air. Some were filled with packed earth, while others, on the same level, were almost empty. One of them contained the nest of a field-mouse.

Eighteen inches below the first layer another stratum was found, in character much like the first — crowns uppermost and faces to the north, flanked on each side with long-bones. The calcined bones were as much in evidence in the second layer as in the first. Occasional bits of charcoal were encountered at all levels, as well as some baked loess, but there had not been sufficient fire used in the sepulcher to calcine the bones, and it is evident they had been subjected to heat prior to interment.

On the last day the excavation was enlarged, and a third stratum of skulls was found beneath the others. These lay without order, intermingled with skeletal parts. Thirty-nine skulls and many skeletal parts were taken from the mound.

Another skull, in pieces, was obtained by the writer several weeks later during a field meeting of the Nebraska Ornithological Union in the mound's vicinity. It was peculiarly marked by an incised line extending across the frontal and both temporal bones, and is among a number sent to Dr Hrdlička for examination.[1]

Potsherds and flint scrapers, pumice, pieces of red hematite, and quartzite spalls, similar in every respect to objects found in Work A and other nearby ruins, were found with these remains, showing relationship between some of the skeletons and those of the occupants of the earth lodges described in this paper as surrounding the Wallace mound on three sides.

Postscript

Two features bearing on the subjects discussed in this paper have been noted subsequently and are here given because of their connection with the subject matter treated.

In the latter part of October, 1908, while graders were leveling a loess-capped hill at the junction of Thirteenth and I streets, South Omaha, Messrs Wallace and Hughes found there three greatly fractured human crania and the tibia of a skeleton associated with several mortuary objects. The best preserved of the skull fragments show a moderately thick cranial wall, somewhat heavy supraorbital ridges (although not heavier than occasionally found among Indians), and an exceedingly flat forehead without frontal eminences. The site is well drained, and the bones lay under a mound so low that it could not be noted owing to the dense growth of shrubbery that covered the hill. The hill extends along the edge of the river-bottom and is about one hundred feet higher than the water level.

My two associates and the graders observed, two and a half feet from the surface of the hill, ten or twelve bright reddish spots in the loess, in three of which were the three broken skulls. These red-

[1] See specimen No. 251,894 in the accompanying description by Dr Hrdlička.

dish spots I found on examination to be loess burned to the consistency of soft brick, through which small flakes and pieces of red hematite were profusely scattered. When the plow passed through one of these red spots, so thickly was the color spread over its surface that the metal and wood were colored a bright vermilion.

The mortuary objects found with the skulls consist of two gorgets, one of slate (pl. I, 1, *c*), the other (the larger) of mica schist (pl. I, 1, *e*). Each gorget lay just above a skull and immediately over their orbital cavities.

Other objects with the remains were a small chert blade, several objects made from the anterior side of beaver-teeth (pl. III, 1, *a*), and a dozen finely made rectangular objects of shell, slightly notched at one end and each with three notches on each side (pl. III, 1, *c*, *e*). All the objects, with the exception of the chert blade, differ from anything hitherto found in this section.

Excavations in various parts of the same hill showed small pieces of human bones, but no skulls.

Five hundred yards directly west of the spot yielding the skulls, a house ruin of the kind hitherto described produced objects similar to those of Childs Point, among which was an incisor of a beaver, showing colors similar to the objects found with the skulls.

The second feature relates to the excavation of a house ruin south of the property line of Childs Point, from which were taken hundreds of fine implements cached nine feet beneath the surface. The cache had been filled with more than two cubic yards of ashes, through which implements were scattered. One of the objects was a crude spoon (?) of buffalo-horn, the bowl being a portion of the skull of the animal (pl. V, 1, *a*), and an object of antler, probably used for straightening arrowshafts (pl. V, 1, *g*).

On the eastern side of the ruin, five feet from the surface, I noted a vertical step similar to that found in Work A. About the floor, covering perhaps a square yard, were scattered a peck of small flint flakes and chips, and lying with them was the implement with which the primitive artisan probably had been working — a short smooth piece of antler showing a high polish, similar to the antler objects found in a spring in Oklahoma and which Prof. W. H. Holmes sug-

gests might have been used for flaking flint implements by percussion (pl. v, 1, *b*, *f*).[1]

Other objects found in these ruins were many large flattened pieces of baked clay, one surface showing an impression like the grain of split wood, the opposite showing the imprint of small twigs and leaves. These were found within the ruin, not far from the rim about which the outer row of posts were placed. These specimens substantiate a conclusion based on a similar discovery, made earlier in the year, pointing to the use of a plaster of clay in some part of the house construction and which became baked when the house was destroyed by fire.

Five feet south of the point where the primitive artisan sat chipping his flint implements, I found another cache, the bottom of which was twelve feet from the present surface and about eight feet from the surface of the lodge floor. A sherd nearly a foot long by eight inches wide; a small mortar made of a drift pebble, two inches deep by three inches in diameter, showing a very slight "dish," and a charred corncob, were found. The cob, which was scarcely three inches in length by three quarters of an inch in diameter, shows that the grains were not larger than those of our popcorn, and had twelve rows of kernels.

The filling of the cache consisted of alternate layers of gray ash and the usual cache "dust" to within three feet of the bottom; above that occurred surface earth — a mixture of rather dark and light soil — then clay, probably placed in the opening and tamped while wet, the line of demarcation between it and the surrounding loess being very plainly marked.

OMAHA, NEBRASKA.

REPORT ON THE SKELETAL REMAINS

BY ALEŠ HRDLIČKA

The collection of human bones presented to the National Museum by Mr Gilder consists of two small lots, all in a more or less imperfect condition. There are in all six skulls, several long-bones, and two pieces of a skull which show the effect of cremation.

[1] Flint Implements and Fossil Remains, *Annual Report Smithsonian Institution*, 1901, p. 247, pl. 24, 25.

None of the specimens bears evidence of great antiquity, and one of the skulls appears to be quite recent. All show well-defined characteristics of the Indian race. They present but few lesions, and no sign of syphilis or tuberculosis.

Two of the skulls are flattened posteriorly, the result of cradle-board pressure. Of the non-deformed skulls, one is strictly dolichocephalic, while three show typical brachycephaly. These conditions indicate the presence of at least two, and possibly three distinct tribes of Indians.

The dolichocephalic skull represents people of the type of the majority of the Plains Indians and of the Algonquians, while the brachycephalic crania connect more immediately with those of the same type in Iowa, and remotely with the round-head people of the South Central and Gulf states.

The individual specimens may be described as follows:

Catalogue No. 251,893. — A defective skull, found buried in the earth taken from one of the circular earth-lodge ruins. The frontal parts are missing. The cranium is plainly that of an adult male, and shows no deformity. It is of fair size, of ordinary thickness (left parietal above the squamous suture 5–7 mm.), and brachycephalic in form. The ridges and processes indicate strong but not excessive musculature. The left mastoid shows an old perforation, the nature of which is not clearly discernible. The upper jaw presents alveolar prognathism and deep canine fossæ. The lower jaw is strong; height at symphysis 3.4 cm. The teeth are of moderate size and without abnormality in number or form; they are worn off to about two-thirds of their height above the alveoli.

With this skull was found a piece of an adult femur; it shows moderate strength and pronounced platymery (3.4 × 2.25 cm. at the broadest part of the flattening).

Catalogue Nos. 251,889, 251,890. — These two crania, which were marked respectively *A* and *B* by the collector, are from a mound near Bellevue, Nebraska. No. 251,889, the darker specimen, is from a superficial position, having been found about eighteen inches from the surface; while the lighter skull, No. 251,890, is from the lowest level of the mound. Both specimens are damaged, the former lacking all parts of the face, the latter, parts of the posterior facial structure.

No. 251,889 is apparently a male skull, though there remains some doubt as to the sex; it is symmetric, in no way deformed, quite heavy, and brachycephalic. No. 251,890, plainly the skull of a female, is light, and shows marked occipital flattening, on account of which its normal shape cannot be positively determined.

Neither of the specimens shows any important anomaly or other

special features. The principal determinations and measurements are as follows:

	251,889		251,890	
Approximate age	50		25	
Diameter antero-posterior	17.1	cm.	(15.0	cm.)
Diameter lateral maximum	14.3	cm.	(13.6	cm.)
Basion-bregma height	12.9	cm.	(12.7	cm.)
Cranial index	*83.6*	cm.	?	
Height-length index	*75.4*	cm.	?	
Height-breadth index	*90.2*	cm.	?	
Cranial module	14.77	cm.	13.77	cm.
Capacity	1245	cc.	1080	cc.
Thickness of left parietal above squamous suture	5–6	mm.	4–5	mm.
Menton-nasion height	?		10.3	cm.
Alveolar point-nasion height	?		6.0	cm.
Basion-alveolar point length	?		about 10.0	cm.
Basion-nasion length	10.1	cm.	8.9	cm.
Diameter frontal minimum	9.7	cm.	8.7	cm.
Lower Jaw: Diameter bigonial	?		8.9	cm.
Angle, mean	?		125°	
Height of symphysis	?		2.95	cm.
Orbits, height, right	?		3.4	cm.
Orbits, breadth, right	?		3.9	cm.
Nose, height	?		4.4	cm.
Nose, breadth	?		2.4	cm.
Palate, external length (Turner)	?		5.3	cm.
Palate, external breadth (Turner)	?		6.4	cm.
Foramen magnum, mean diameter	3.0	cm.	3.0	cm.
Circumference, maximum above ridges	49.0	cm.	45.8	cm.
Arc nasion-opisthion	34.3	cm.	33.2	cm.

Catalogue No. 251,891. — This skull was found by Mr Harry Jewell, of Omaha, in a mound, approximately three feet high and eighty feet in diameter, about two miles from the Council Bluff of Lewis and Clark, in Washington county, and some six miles north of the "Gilder" mound. There were parts of several skeletons, flint chips, and a piece of rubbed sandstone.

This cranium is that of a male of about fifty-five years of age. It is well developed, shows no deformation, nor any lesion except accidental breaks, and is decidedly brachycephalic, in type much like skull No.

251,889 from the mound near Bellevue. Unfortunately the facial parts have been lost, but the lower jaw remains. The few measurements which the specimen yields are as follows:

Diameter antero-posterior	about	18.0 cm.
Diameter lateral maximum		15.7 cm.
Height		Medium
Capacity		Fair
Thickness of left parietal above squamous suture		5–7 mm.
Circumference maximum above ridges, approximately		53.5 cm.
Lower jaw: Diameter bigonial		9.7 cm.
Height of symphysis	about	4.0 cm.
Angle	near	115°

Catalogue Nos. 251,892 and 251,894. — Two skulls from the Wallace mound, Sarpy county, Nebraska. Skull 251,892 is that of an aged female, and shows pronounced occipital flattening or cradle-board compression. No. 251,894 is the skull of a young adult male, with a slightly asymmetrical occiput, but without flattening. The form of No. 251,892 cannot be determined on account of the flattening; No. 251,894 is brachycephalic.

Cranium No. 251,892 seems to be comparatively recent, more so than the other skull from the same mound. Judging from the supra-orbital ridges, mastoids, and styloids, all of which are somewhat more developed than in the average female, it belonged to a woman accustomed to considerable muscular labor. The face shows quite marked alveolar prognathism and canine fossæ, the depth of which is accentuated by senile sinking in. The sutures, as in all the specimens of the Gilder collection, show sub-medium serration and but few Wormians. The specimen presents no artefacts or disease. Its measurements are:

Diameter antero-posterior	(15.5 cm.)
Diameter lateral maximum	(15.0 ")
Basion-bregma height	(13.8 ")
Thickness of left parietal above squamous suture	5–6 mm.
Diameter bizygomatic maximum	13.8 cm.
Basion-nasion length	9.8 "
Diameter frontal minimum	9.1 "
Height of nose	5.25 "
Diameter of foramen magnum	3.3 "
Circumference maximum above ridges	48.4 "
Arc nasion-opisthion	33.7 "

Specimen 251,894 is in pieces, and unfortunately some important parts which would have made possible its reconstruction are missing.

The skull was apparently one of normal development and is that of a male of only moderate musculature. The only measurements possible are :

Thickness of left parietal above squamous suture	5–6 mm.
Diameter frontal minimum	9.0 cm.
Mean diameter of foramen magnum	3.3 "
Lower jaw :	
Height of symphysis	3.4 cm.
Angle	127°

The skull presents interesting and extensive artefacts of a peculiar nature. Over the frontal, parietal, and part of the occipital are connected and to some extent symmetric, irregular grooves, which appear as if made with a coarse implement such as a stone axe, or a large stone knife. They

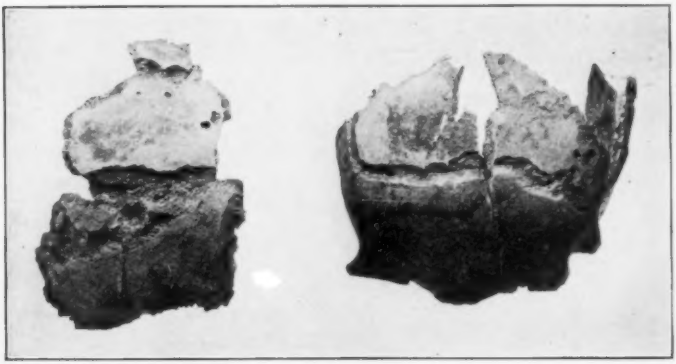


FIG. 8.—Skull from the Wallace Mound.

are from two to four millimeters deep, and range from six to more than twenty millimeters in breadth. They present clean though irregular and grossly serrated edges in the outer compact layer of the bone in the front, but become more diffuse in the back, particularly over the posterior part of the right parietal and on the right half of the occipital squama. They reach well into the cancellous tissue, and in places, particularly in the back on the right side, to the ventral compact layer. On the occipital this compact layer shows a number of small perforations, apparently the result of inflammation or suppuration. There is nowhere in the grooves or in their vicinity any hypertrophy of the bone tissue, but there are numerous places which show what appears to be slight repair, from which it would seem that the injury was inflicted during the life of the individual, who

survived for some time at least. The outline of the main groove over the frontal and parietals surrounds in an irregular circular way the crown of the head, and might suggest a crude attempt at scalping; but there are grooves also within this circle, particularly one along the sagittal suture. Nothing suggests that the injury might be due to the growth of roots or to the gnawing of animals. Possibly further specimens from the same region will shed light on the exact nature of the peculiarity. (See fig. 8.)

Besides the two skulls noted above, Mr Gilder presented to the National Museum two pieces of an adult male skull, both of which are calcined, due possibly to the cremation of a captive. There are, furthermore, three long-bones which proceeded from the left side of apparently the same individual. The femur measures 44.4 cm. in length and shows a pronounced platymery (3.45 × 2.6 cm. at the greatest breadth of the subtrochanteric flattening), and it also shows a well-developed third trochanter. The shape of the shaft, in transverse section at the middle, is intermediary between triangular and rounded (1–R); linea aspera well-developed.

The left tibia is of moderate length; diameters at middle 3.4 × 2.1 cm., showing moderate platycnemism; shape of transverse section of shaft at middle, 4; prominent popliteal ridge.

The left humerus, 31.8 cm. long, measures 2.4 × 1.8 cm. at the middle; shape of transverse section of shaft at middle, 1–4; no anomalies.

The bones indicate a male adult of moderate stature, and good but not excessive musculatory development.

U. S. National Museum,
Washington.

SOME UNUSUAL IROQUOIS SPECIMENS

By M. R. HARRINGTON

WHILE gathering ethnological material among the Canadian Iroquois in the summer of 1907, the writer was fortunate enough to secure, besides a fair typical collection of ceremonial paraphernalia, weapons, games, costume, and domestic utensils, a number of unusual specimens, the description of which may prove of interest to students of Iroquois culture. As in the case of the Delaware material described in a previous article,[1] which

FIG. 9. — Oneida wooden bowl.

was collected during the same season, the majority of these specimens may now be found in the collection of Mr Erastus T. Tefft of New York, who furnished the photographs for this article not otherwise credited. Only approximate measurements of the Tefft speci-

[1] Harrington, Vestiges of Material Culture among the Canadian Delawares, *American Anthropologist*, 1908, N. S., X, no. 3, pp. 408–418.

mens can be given, however, the collection being in storage and, for the present, not accessible.

The old wooden bowl illustrated in figure 9 is perhaps the most striking object in the collection. It is oval in outline, with a length of perhaps fourteen inches, and seems, judging from the curling grain of the wood, to be made from a burl, perhaps of black ash or elm. Its chief claim to interest lies in the carved handles, of which there are two, one at each end, rising from the nearly horizontal rim. Each handle represents the upper portion of two human figures standing side by side, the arm of the left-hand figure in each case being thrown affectionately about the neck of its neighbor to the right. The eyes are represented by white beads imbedded in the wood. Although one of the heads is missing and the bottom somewhat decayed, this specimen remains the best bowl of Iroquois origin yet seen by the writer. It was purchased from the Oneida near St Thomas, Ontario, who claimed that it had been brought by the late chief Snagalis from the old home of the Oneida in New York state.

Another fine but simpler old burl bowl, also obtained here, is oval in outline with the rim rising in graceful points at either end, resembling the form prevalent among the Delawares and eastern Chippewa. The Mohawk near Deseronto, Ontario, sold me a still better specimen of the same kind, said to have been brought from the Mohawk valley, while a round burl bowl for the peach-stone dice game was procured from the Onondaga near Syracuse, New York. I mention these burl bowls especially on account of their rarity among the Iroquois, whose bowls for domestic use are generally long, tray-like, and of soft wood; while their round gambling bowls, although made of hard wood, seldom show the use of a burl as material.

The theory that the modern "gunstock" war-club with its steel blade is descended from the prehistoric hafted celt receives support from the discovery of the mounted celt, shown in figure 10, *a*, in the hands of an old Cayuga named Thomas Davy, at Six Nations reserve, near Brantford, Ontario. The old man claims that this "tomahawk" once belonged to his father, and that it is very old. He painted it black a few years ago, he told me, to preserve it from

the dry-rot which had attacked the handle. The celt itself is of the thin flat variety frequently picked up on New York Iroquois village sites, while the handle seems also of old type, although its exact age would be difficult to determine. A similar, but newer specimen, also from the Cayuga of Six Nations reserve, is the war-dance club shown in figure 10, *b*, into which a prehistoric flint blade

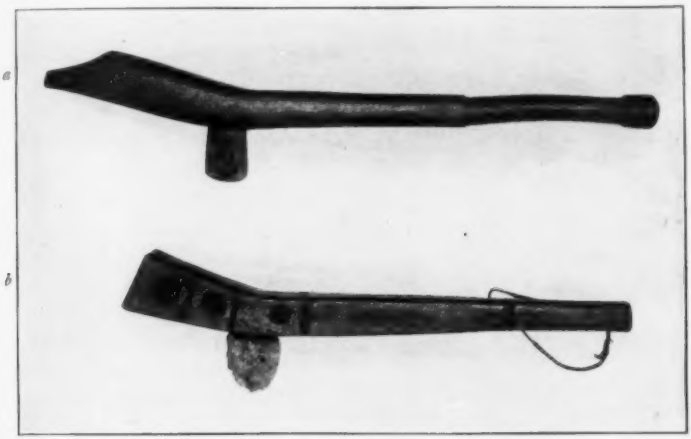


FIG. 10. — *a*, Cayuga mounted celt; *b*, Cayuga war dance club.

has been fastened. Clubs of this type with steel blades or deer-horn spikes are still occasionally seen among the Six Nations.

Witchcraft is still widely credited by the Iroquois, who believe that the sorcerers can transform themselves into animals — hogs, dogs, and especially owls, in which form they sally forth on their unholy nocturnal errands. These amazing transformations are effected by means of a mysterious chasm or "witch medicine" known in Cayuga as *otkoⁿ'tra'* or *ûtgoⁿ'tra'*. Two of these were obtained from the heirs of the late James Jamieson, a Cayuga. They consist of bits of woody root, one, the larger and older, being about an inch and a quarter long by half as thick, with the surface fairly covered with tiny carved faces of men and animals; while the smaller, about half as large, bears but one carved face. They are

provided with deerskin covers, and are kept in a special deerskin bag. (See fig. 11).

Among James Jamieson's effects was also a photograph of one of his family — a son, I believe, — lying dead. Sewed fast to the cardboard all around the picture of the corpse were dozens of tiny human figures carved from what appeared to be bone, but which on closer examination proved to be made from date-stones. I tried my best to get from the Jamiesons an explanation of this grotesque little mystery without success, so finally decided not to buy the figures, as their origin and use were in doubt, and their material certainly not Indian. But when I later told Chief John A. Gibson what I had seen, he informed me that certain Indians were sometimes favored by the mythic dwarfs known as Stone-rollers[1] who appeared to them in dreams and promised them aid and protection on condition that they would carve little figures to represent their pygmy race, which must be carefully cared for and "talked to" from time

FIG. 11. — *a*, Cayuga "witch medicine"; *b*, Deerskin cover for same; *c*, Smaller "medicine" in cover.

[1] Converse, Myths and Legends of the Iroquois, *Bulletin 125, N. Y. State Museum*, 1908, p. 101 et seq.

to time. This may have been the explanation of the date-seed figures.

Also connected with dreams are the miniature dugout canoes, three or four inches long, of which several specimens were secured. Some being, apparently a water-sprite, whose name and characteristics were not made clear to me, appears to an Indian in a dream, giving warning of danger by water, but promising protection if a little canoe be made and kept, and tobacco burned in his honor at intervals. In similar fashion a little beadwork disk with a center of wampum represented to its owner the promise of the sun, given in a dream — a promise of protection and aid.

That games were sometimes played in obedience to dreams is exemplified by a set of plum-stone dice purchased from Lucy Pierce, a Cayuga, at Onondaga Castle, New York. Mrs Pierce informed me how she had been promised good health in a dream if she would make plum-stone dice and play with them from time to time. It should be noted here that while peach-stone and bone dice are frequently found today on the Iroquois reservations, plum-stone dice are very rare.

A similar belief is found among so-called Seneca in Oklahoma, where certain individuals hold games of lacrosse or Indian foot-ball at intervals in response to dreams, for the benefit of their health. At these games the "patient" provides a feast for the crowd and is supposed to receive benefit from the dream-spirit who is pleased by the game.

Before visiting the Six Nations reserve I had obtained but three types of masks from the Iroquois; large wooden masks, called *ha'do'wī'* in Onondaga, used in the rites of the "False-face Society"; miniature masks of wood or stone kept as health charms, called *goya'danu^{n}'na;* and another large variety known as *gajĕ'sa'*, made entirely of corn-husks and used by the Husk-face Society.

But on reaching the Onondaga of Canada, I found besides these "familiar faces" a variety entirely new to me — a mask known as *ɔwi'ẽ^{n}'ga gajĕ'sa'*, "wooden bushy-head" which, although made of wood, belongs to the Husk-face Society and is classed as a *gajĕ'sa'*. In appearance its connection with the Husk-faces is shown only by its encircling fringe of shredded husk representing

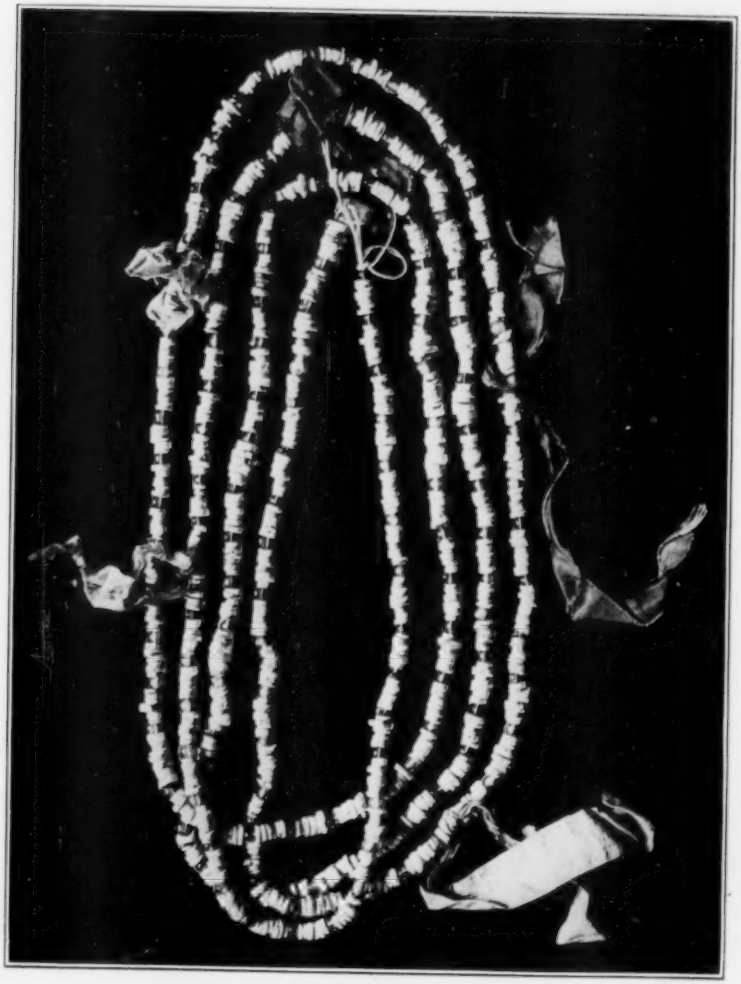
hair. It differs however from the common wooden mask, or *ha'do'wi'*, in that it is carved to represent a normal human face, not distorted and hideous, while the painting is confined generally to a round spot of red on each cheek. It is considered more powerful than the ordinary Husk-face.

Chief John A. Gibson informed me that a peculiar rattle bought from the Cayuga, made by attaching a bunch of deer-hoofs and phalanges, each on a separate string, to a short wooden handle, is intended for use by the Little Waters Medicine Society [1] in a dancing ceremony and feast for the "renewal of membership"; but is not used at the night song, the only rite of the Little Waters with which I had previously been familiar. I had purchased a similar rattle from an eastern Chippewa shaman at Walpole Island, Ont., but had never before seen one among the Iroquois.

The few remaining Indians of Tutelo blood on Six Nations reserve are so assimilated with the Cayuga with whom they live that it will not be out of place to mention them here. Of their old tribal culture there remain only a few words of Tutelo speech, and a remnant of their dances, songs, and ceremonies, while among ceremonial objects the Tutelo wampum alone remains different from that of the Iroquois. These archaic beads, known to the Cayuga as *ganu"gwi'ya'*, are flat thin fragments of some shell, probably marine, roughly ground into the form of irregular disks about a quarter of an inch in diameter and perforated (pl. VII). They are usually strung in the form of a necklace, with glass beads interposed at intervals, and decorated with gay ribbons, for use in the Tutelo adoption ceremony.

If a Tutelo family lost a member and wished to adopt an outsider to take the place of the deceased, they took material for a costume to the home of the person selected, whose family made it into clothing, which was returned to the mourners. On the night of the feast held in honor of the dead this costume was put on the person to be adopted, and the necklace, *ganu"gwi'ya'*, placed about his neck in token of his change of tribe, to be worn until morning, when the feasters dispersed to their homes.

[1] Parker, Neh Ho-noh-tci-noh-gah, the Guardians of the Little Waters, a Seneca Medicine Society, in "Iroquois Myths and Legends," *Museum Bulletin 125, N. Y. State Museum*, 1908, p. 149 et seq.



TUTELO WAMPUM

Since my visit to Six Nations reserve there is, I understand, but one string left among the Indians, the owner of which, Mrs Husk, "refuses to sell at any price," as she keeps it to rent to other Tutelo when needed. One of the three strings I collected is now in the Tefft collection, one in the collection of George G. Heye, Esq., and one in the New York State Museum, which already had a portion of a similar string, the origin of which was not known.

PAWHUSKA, OKLAHOMA.

EOLITHIC AND PALEOLITHIC MAN

By GEORGE GRANT MacCURDY

The last two years have witnessed important developments in the domain of prehistoric anthropology. This is particularly true of the European field and of discoveries in which skeletal remains of early man have figured. One such was discussed by me recently in this journal,[1] viz., that of *Homo Mousteriensis*. Two others form the subject of the present paper. The first of these was made by Dr Otto Schœtensack[2] on October 21, 1907, in a sand-pit near the village of Mauer, ten kilometers southeast of Heidelberg. Mauer lies in the valley of the Elsenz, a tributary of the Necker. The human lower jaw was found in situ in the so-called Mauer sands, at a depth of 24.10 meters and .87 meter from the bottom of the deposit. The first 10.92 meters at the top of the section are composed of loess which is classed as upper Quaternary, while the Mauer sands forming the rest of the section are lower Quaternary. The loess itself represents two district periods, an older and a younger.

The horizon from which the human lower jaw came has furnished other mammalian remains, including *Felis spelæa*, *Felis catus*, Canis, *Ursus arvernensis*, *Sus scrofa* var. *priscus*, *Cervus latifrons*, Bison, *Castor fiber*, Equus, *Rhinoceros etruscus*, and *Elephas antiquus*.

Schœtensack likens the fossil mammalian fauna of the Mauer sands to the preglacial Forest beds of Norfolk and the upper Pliocene of southern Europe. This is particularly true of *Rhinoceros etruscus*, and the horse of Mauer which is a transition form between *Equus Stenonis Cocchi* and the horse of Taubach, both of which may be referred definitely to the Pliocene. The rest of the mammalian fauna belongs to the lower Quaternary.

The coëxistence of man with *Elephas antiquus* at Taubach, near

[1] Some Recent Paleolithic Discoveries, *American Anthropologist*, Oct.–Dec., 1908.

[2] *Der Unterkiefer des Homo Heidelbergensis aus den Sanden von Mauer bei Heidelberg: Ein Beitrag zur Paläontologie des Menschen*, von Otto Schœtensack. Mit 13 Tafeln, davon 10 in Lichtdruck. Leipzig: Verlag von Wilhelm Engelmann, 1908.

Weimar, gave Schœtensack special reasons for expecting to find human remains also at Mauer. The possibility of such a discovery had kept him in close touch for twenty years with the owner of the sand-pit, Herr J. Rösch. The discovery was made by one of the workmen, with whom at the time were another workman and a boy. Schœtensack was immediately informed, and arrived the following day. The lower jaw was intact, but the stroke of the work-

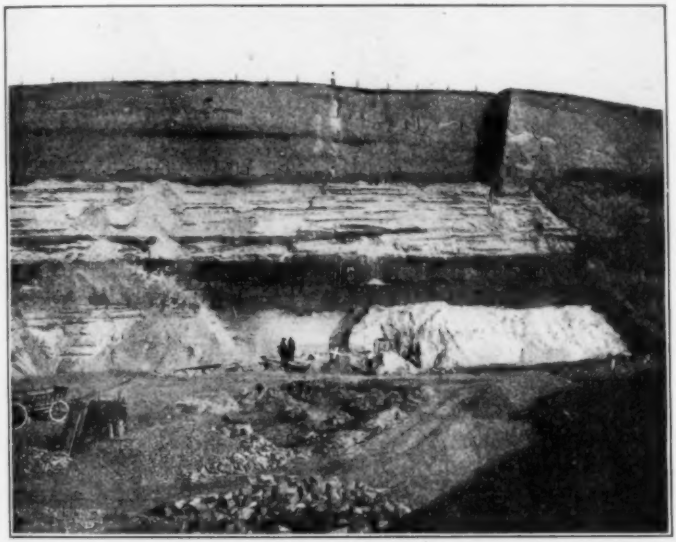


FIG. 12. — Sand-pit at Mauer. The lower jaw was found at the spot marked with a cross.

man's shovel had caused the two halves to separate along the line of symphysis. It was discolored, and marked by incrustations of sand exactly as are all fossil bones from the Mauer sands. A limestone pebble was so firmly cemented to the left half of the jaw, covering the premolars and first two molars, that the crowns of all four stuck to the pebble when the latter was removed. Both the jaw and the pebble were marked by dendritic formations.

Perhaps the first thing to attract one's attention is the absence

of a chin. The region of the symphysis is somewhat gorilloid, while the ascending ramus suggests rather the gibbon. The teeth, however, have a distinctly human stamp, not only in their general appearance, but also in point of size — larger than the average, but smaller than in exceptional cases to be found among the Australians, for instance. One is impressed, in fact, by the relative smallness of the teeth as compared with the jaw in case of *Homo Heidelbergensis*. The alveolar arch is long enough, for example, to allow space for

FIG. 13. — The lower jaw of *Homo Heidelbergensis*.

a fourth molar. I noted the same phenomenon in a collection of recent crania from Gazelle peninsula, New Britain.[1] In one of these the alveolar arch of the upper jaw projects 12 mm. beyond the third molar, while the average for the males is 8.6 mm. Respecting the series of lower jaws, I quote from my paper read in 1902: "The third molar is generally situated well in front of the ascending ramus of the lower jaw, when the jaw is so held as to bring the anterior margins of the rami in a line with the eye. With the jaw held in this position, the entire crown of the third molar can be seen in thirteen out of a total of eighteen cases."

The crowns of the teeth in the Mauer specimen are worn enough to show the dentine, proof that the individual had reached

[1] *American Anthropologist*, 1902, N. S., IV, 474.

the adult stage. All the molars, except the third left, have five cusps. The tendency in recent man is toward a four-cusp type for the third molar, if indeed there be a third molar. The breaking away of the crowns of four teeth on the left side tended to facilitate

FIG. 14. — The lower jaw of *Homo Heidelbergensis* (about ⅗).

the study of the pulp cavity and walls. This study reveals the fact that the dentition of *Homo Heidelbergensis* represents a youthful stage in the dentition of the modern European. That is to say, in the ontogeny of the latter, a stage representing adult dental characters when the race was young is now reached at the age of from nine to fourteen years. This is not an anthropoid character, but a primitive human character — another reason for leaving the anthropoids to one side in our search for the ancestral form and the origin of genus *Homo*.

A study of the corpus and ramus mandibulæ reveals at once a number of points of divergence from the modern European. The

body is massive, and relatively long in proportion to the bicondylar breadth, its greatest height being in the region of the first and second molars. The basis mandibulæ, if applied to a plane, touches only on either side of the symphysis and near the angulus, forming three gentle arches — one medium and short, called by Klaatsch incisura submentalis; and two lateral and long, to which might be given the name incisura basilaris. The latter is seen to good advantage also in the chimpanzee.

The ramus is characterized by unusual breadth, 60 mm. as opposed to an average of 37 for recent examples. The angle formed by lines tangent to the basis and the posterior border of the ramus is 107° — smaller than the average. The processus coronoideus is exceedingly blunt, and the incisura mandibulæ correspondingly shallow. The condyloid process is noteworthy on account of the extent of articular surface, due to an increased antero-posterior diameter (13 and 16 mm.), since the transverse diameter is relatively short. The neck constriction is very slight, approaching in this respect the anthropoid forms.

The first fossil lower jaw to attract world-wide attention on account of its primitive characters and association with remains of the mammoth and rhinoceros, was that found in 1866 by Dupont in the cavern of La Naulette, valley of the Lesse, Belgium. It was only a fragment, but enough remained to demonstrate the complete absence of chin and the nature of the dentition. Its kinship with the man of Neanderthal, whose lower jaw could not be found, was evident. It tended therefore to legitimatize the latter, which hitherto had failed of general recognition. The fortunate association of skull with lower jaw came in 1886, when the remains of two individuals were discovered in the cavern of Spy, also in Belgium. In the same layer were found not only remains of the mammoth and the rhinoceros, but also an industry of the Mousterian type.

Among the human remains found in 1899 by Professor Gorjanovič-Kramberger at Krapina, there are parts of a number of lower jaws that bear the same racial characters as those of La Naulette and Spy. They were also associated with a Mousterian industry. Instead, however, of the *Rhinoceros tichorhinus*, as at Spy, there were remains of *Rhinoceros Merckii*, an older type. This may be

accounted for by the fact that *Rhinoceros Merckii* would persist longer in the south than in the north.

That the lower jaws of La Naulette, Spy, and Krapina represent one and the same stage in the evolution of *Homo sapiens*, there is no longer any doubt. That this stage is intermediate between recent man and *Homo Heidelbergensis*, a careful comparison of the specimens in question furnishes ample proof. The lower jaw from Mauer is therefore pre-Neanderthaloid. That it also exhibits pre-anthropoid characters gives it a fundamental position in the line of human evolution.

Dr Schœtensack is to be congratulated on his rich reward for a twenty years' vigil. Let us hope that his reward for the search after human industry in the same deposits may be speedy and ample.

The lower jaws of the Neanderthal, or so-called primigenius, type, mentioned above, were all found in cavern or rock-shelter deposits. These cannot be definitely correlated with river-drift and loess; hence we cannot measure the time that separates the man of Spy from *Homo Heidelbergensis*. Judging from somatic characters alone, the time separating the two must have been considerable.

The Mousterian industry which is found associated with *Homo primigenius* occurs in deposits that mark the close of the middle Quaternary, and also in cavern deposits corresponding to the base of the upper Quaternary. It belongs to the transition from the Riss glacial period to the Riss-Würm interglacial period. At Wildkirchli, in the Alps, it is frankly interglacial, a station that probably belongs to the close of the Mousterian epoch.

The position of the Mauer lower jaw near the bottom of the old diluvium, and its association with the remains of *Elephas antiquus* and *Rhinoceros etruscus*, suggest for it a place at least as far back as the lower Quaternary. But the industry of the lower Quaternary is eolithic, the evolution of the Chellean type not taking place until the middle Quaternary. The probabilities are, therefore, that if Schœtensack finds any artifacts in the horizon of *Homo Heidelbergensis*, they will be of the eolithic type. Such a discovery would establish not only the identity of the maker of Quaternary eoliths, but would also help immensely to solve the riddle of Tertiary eoliths (Boncelles, Cantal, Chalk Plateau, etc.).

The most recent discovery of paleolithic human remains was made on August 3, 1908, by the Abbés J. and A. Bouyssonie and L. Bardon, assisted by Paul Bouyssonie, a younger brother of the first two. It is in many respects one of the most satisfactory, particularly on account of the pieces being so nearly complete. The locality is the village of La Chapelle-aux-Saints, twenty-two kilo-

FIG. 15 — Skull of Mousterian age from the cavern of La Chapelle-aux-Saints (Corrèze), France.

meters south of Brive, in the department of Corrèze, which forms a part of one of France's celebrated cavern belts, including Dordogne and Charente to the west.

It was only a few months earlier, and in this same belt, cavern of Le Moustier, valley of the Vézère, that Herr O. Hauser found *Homo Mousteriensis*. The discovery at La Chapelle-aux-Saints was also made in a cavern a short distance from the entrance. It includes not only human bones, but also stone implements and the remains of the reindeer, Bison (or Bos), Equus, *Capra ibex*, *Rhinoceros tichorhinus*, etc.

That this may have been a burial is suggested by the disposition of the human remains which seemed to lie in a rectangular pit sunk to a depth of thirty centimeters in the floor of the cavern. They were covered by a deposit intact thirty to forty centimeters thick, consisting of a magma of bone, of stone implements and of clay. The stone implements belong to a pure Mousterian industry. While some pieces suggest a vague survival of the Acheulian implement, others presage the coming of the Aurignacian. Directly over the human skull were the foot-bones, still in connection, of a large bovine animal — proof that the piece had been placed there with the flesh on, and proof, too, that the deposit had not been disturbed. Two hearths were noted also, and the fact that there were no implements of bone, the industry differing in this respect from that at La Quina and Petit-Puymoyen (Charente), as well as at Wildkirchli, Switzerland.

The human bones include the cranium and lower jaw (broken, but the pieces nearly all present and easily replaced in exact position), a few vertebræ and long-bones. The ensemble denotes an individual of the male sex, whose height was about 1.60 meters. The condition of the sutures and of the jaws prove the skull to be that of an old man. The cranium is dolichocephalic, with an index of 75. It is said to be flatter in the frontal and occipital regions than those of Neanderthal and Spy.

Beyond the loss of teeth, due evidently to old age, the skull is so nearly intact as to make possible the application of the usual craniometric procedure, thus leading to a more exact comparative study than has been possible, for example, in all previously discovered paleolithic human skulls dating from the same period, not excepting even Spy and *Homo Mousteriensis*. This is particularly true of the basi-occipital region, the upper jaw, and the face-bones. We

are thus enabled to supplement our knowledge of Mousterian craniometry at several points and to correct it at others. This is the first case, for example, in which the foramen magnum has been preserved in human crania of the Mousterian type. It is found to be elongated, and is situated farther back than in modern inferior races. The character of the inion and its relation to the cranial base is revealed for the first time. The same may be said of the palate, which is relatively long, the sides of the alveolar arch being nearly parallel; that is to say, the palate is hypsiloid — one of the two characteristic simian forms. Boule also notes the absence of the fossa canina. The nose, separated from the prominent glabella by a pronounced depression, is relatively short and broad. The lower jaw is remarkable for its size, for the antero-posterior extent of the condyles, the shallowness of the incisura mandibulæ, and the absence of chin.

The man of La Chapelle-aux-Saints is welcomed into the Mousterian family ranks, already represented by cousins from nearly a score of localities in various parts of Europe. To the abbés who have introduced him, the science of prehistoric archeology owes a special debt of thanks, as it does also to so many other members of the priesthood from the times of MacEnery and Bourgeois down to that of Breuil. As for *Homo Heidelbergensis* he stands in a class, ancestral, to be sure, but by himself. Let us hope that he too may not long lack companionship of his own kind.

YALE UNIVERSITY,
NEW HAVEN, CONN.

ANTHROPOLOGY AT THE BALTIMORE MEETING

WITH PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR 1908

By GEORGE GRANT MacCURDY

The joint meeting of Section H of the American Association for the Advancement of Science and the American Folk-Lore Society was held at the Maryland Institute, Baltimore, December 28–31, 1908.

Meetings of the Sectional Committee

In the absence of Prof. R. S. Woodworth, vice-president of the Section, Professor Boas, retiring vice-president, acted as chairman of the Sectional Committee. Officers of the Baltimore meeting were nominated as follows: Member of the Council, B. T. B. Hyde; Member of the General Committee, G. G. MacCurdy. Sectional offices were filled by the nomination of Prof. William H. Holmes, Washington, D. C., as vice-president for the ensuing year; Dr George Grant MacCurdy, New Haven, Conn., secretary for five years; and Dr George A. Dorsey, member of the Sectional Committee to serve five years. These candidates were later elected by the Association in general committee.

Council Meetings of the American Anthropological Association

Members of the Council present in addition to President Boas were R. B. Dixon, G. A. Dorsey, F. W. Hodge, B. T. B. Hyde, G. G. MacCurdy, and Charles Peabody.

Report of the Secretary

The secretary, Dr George Grant MacCurdy, reported that there had been no special meeting or Council meeting since the close of the session in Chicago, the proceedings of which had been published in the *American Anthropologist* for January–March, 1908.

There have died during the year: John Walter Hastings, Cam-

bridge, Mass.; Edward P. Valentine, Richmond, Va.; Prof. Otis T. Mason, Washington, D.C.; and Prof. John H. Wright, Cambridge, Mass.

The growth in membership since January 1, 1908, has been the greatest of any year since the foundation of the Association. This growth has been normal, it being the policy of the Association not to recommend any one without first receiving either a personal application or assent. Such members are apt to be permanent, as is shown by the fact that the annual number of resignations is growing smaller and smaller each year. Fifty-six new names are herewith submitted for election, as follows:[1] Academy of Natural Sciences, Philadelphia; Henry M. Ami; Athenæum Library, Minneapolis; E. E. Baird, Beloit College Library; Biblioteca de la Universidad Nacional de La Plata, Argentina; Biblioteca Nacional, Santiago de Chile; Son Altesse le Prince Roland Bonaparte; California Academy of Sciences; George Randolph Cannon; Prof. L. Capitan; Cleveland Public Library; Columbia University Library; William Elsey Connelley; M. Cooper; Cornell University Library; Miss A. H. Day; Henry Herbert Donaldson; Wilberforce Eames; Lieut. George T. Emmons, U.S.N.; Facultad de Filosofía y Letras de la Universidad Nacional de Buenos Aires; Mrs Eva T. Fenyes; Edwin Sidney Hartland; Charles Henry Hawes; Miss Mary Luis Kissell; Samuel A. Lafone Quevedo; Library of the State University of Iowa; Parker Davis Martin; W. L. Marsden, M.D.; John Danskin Mattson; Dr Charles Jenkins Montgomery; Museo de la Plata; Museo Nacional de Buenos Aires; Benjamin Frank Nead, Jr.; New York Public Library; Arthur W. North; Felix F. Outes; Public Library of the District of Columbia; Paul Radin; Morgan Poitiaux Robinson; Dr Rodolfo Cambiaso; Dr Dudley A. Sargent; Herbert F. Schwarz; Alfred Holt Stone; William Addison Stone; Bradshaw H. Swales; Toronto Public Library; Luis Maria Torres; Mrs Edward P. Valentine; F. W. Vollman; Charles William Wiegel; Hon. E. T. Williams.

Of this list forty-one are of individuals and fifteen of institutions. It will also be noted that thirteen of the new members represent foreign countries, most of them coming from South America, which

[1] Full addresses are given in the list of members printed in this issue.

may be expected to furnish us with other new names during the next few years in view of the fact that the International Congress of Americanists will meet at Buenos Aires and Mexico City in 1910. Our Association is thus becoming more and more an international organization. Eleven of our members were present at the International Congress of Americanists in Vienna, September 9–14, taking an active part in its proceedings, as follows: Ambrosetti, Boas, Miss Breton, Capitan, Hartman, Lehmann-Nitsche, MacCurdy, Morice, Peabody, Saville, and von den Steinen.

Attention is once more called to the duty of each one to help in obtaining new members, the burden of which is being borne almost exclusively by two or three overworked officers. A certain increase is required each year to meet the loss by death and resignation. The total membership is now a little short of three hundred and fifty, representing thirty-five states and territories, including the Philippine islands and Hawaii, and thirteen foreign countries. Let us all work together and try to make it one thousand in the next ten years.

We have at present no members from Delaware, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Arkansas, Oregon, Idaho, Montana, Wyoming, North Dakota, South Dakota, Nevada, or New Mexico.

Report of the Treasurer

The Treasurer's report, which was received and referred to an auditing committee[1] appointed by President Boas, consisting of M. H. Saville and H. I. Smith, is as follows:

Receipts

Balance from 1907		$ 487.38
From Anthropological Society of Washington for *American Anthropologist*,		
Vol. IX, No. 4	$85.19	
Vol. X, No. 1	76.97	
Vol. X, No. 2	77.79	
Back numbers	2.12	242.07
Carried forward		729.45

[1] The committee has not yet reported.

Brought forward		$ 729.45
From American Ethnological Society for *American Anthropologist*,		
Vol. IX, No. 4	$61.71	
Vol. X, No. 1	61.72	
Vol. X, No. 2	62.72	
Extra copy	.83	186.98
Annual dues		1,142.30
Annual subscriptions to *American Anthropologist*		545.94
Sale of back numbers and extra copies of *American Anthropologist*.		93.51
Sale of *Memoirs*		94.13
Publication fund		405.00
Authors' reprints (at cost)		35.21
Advertising in *American Anthropologist*		11.25
Received from Members for illustrations in *American Anthropologist*		36.01
Affiliated Societies for share of printing, etc., in connection with annual meeting		49.84
		$3,329.62

Expenditures

For printing, binding and mailing *American Anthropologist*,			
Vol. IX, No. 4	$284.73		
Vol. X, No. 1	378.44		
Vol. X, No. 2	331.77	$994.94	
Memoirs		653.31	
Reprints		201.54	
Insurance on back volumes		25.00	
Illustrations for *American Anthropologist*		432.10	
Illustrations for *Memoirs*		47.30	
Editorial expenses		76.25	
Treasurer's expenses		145.24	
Secretary's expenses		54.78	
Printing, etc., for Affiliated Societies ($83.12 contracted in 1907)		49.84	
Subscriptions returned		10.00	
Buying back volumes		5.00	
Expenses in connection with periodical literature		10.00	$2,705.30
Balance			$624.32

Bills for Vol. X, Nos. 3 and 4, of *American Anthropologist* and Vol. II, part 3, of the *Memoirs*, not having been presented as yet, the above balance will probably be consumed and a deficit appear when all bills are submitted.

The Editor, Mr F. W. Hodge, did not submit a written report. The reports of standing committees will appear as papers read at the meeting.

On motion, the President appointed F. W. Hodge, R. B. Dixon, and G. G. MacCurdy as a committee on amendments to the constitution with a view to increasing the number of members composing the Council, providing for an executive committee, and for greater facility in the election of members.

It was moved and carried that the Council be empowered to determine the place of the next annual meeting. It was voted that a subscription blank be prepared asking members to subscribe to a prospective Index to the *American Anthropologist*, both old and new series, and that the Committee on Publication be authorized to proceed with the preparation of the Index as far as the available funds may warrant.

The chair appointed Messrs Dixon, Dorsey, and MacCurdy as a Committee on Nominations. The report of this committee was subsequently accepted, the election resulting as follows:

President: Prof. William H. Holmes, Washington.
Vice-president, 1909: Mr Clarence B. Moore, Philadelphia.
Vice-president, 1910: Dr George A. Dorsey, Chicago.
Vice-president, 1911: Miss Alice C. Fletcher, Washington.
Vice-president, 1912: Prof. R. B. Dixon, Cambridge.
Secretary: Dr George Grant MacCurdy, New Haven.
Treasurer: Mr B. T. B. Hyde, New York.
Editor: Mr F. W. Hodge, Washington.
Council: W J McGee, F. W. Putnam, F. Boas, C. B. Moore, G. A. Dorsey, Alice C. Fletcher, R. B. Dixon, G. G. MacCurdy, B. T. B. Hyde, F. W. Hodge (*ex-officio*); F. Baker, L. Farrand, B. Laufer, J. D. McGuire, J. Mooney, C. Peabody (1909); C. P. Bowditch, A. F. Chamberlain, S. Culin, R. B. Dixon, J. Walter Fewkes, G. B. Gordon (1910); E. L. Hewett, J. N. B. Hewitt, W. Hough, A. Hrdlička, A. L. Kroeber, A. M. Tozzer (1911); M. H. Saville, H. I. Smith, G. H. Pepper, W. C. Farabee, J. R. Swanton, G. G. Heye (1912).
To represent the Association in the Council of the American Association for the Advancement of Science: Franz Boas and E. L. Hewett.

The incoming president, Professor Holmes, has appointed committees as follows:

Committee on Program: G. G. MacCurdy (chairman), F. Boas, F. W. Hodge, A. L. Kroeber, C. Hart Merriam.
Committee on Finance: B. Talbot B. Hyde, Stanley McCormick, G.

G. MacCurdy, W. H. Furness, 3d, George G. Heye, Clarence B. Moore.

Committee on Publication: The names of the members of this committee appear on the third page of the cover of this number of the *American Anthropologist.*

Committee on Policy: W. H. Holmes (chairman), W J McGee, F. W. Putnam, C. P. Bowditch, G. A. Dorsey, F. W. Hodge, A. L. Kroeber, C. Peabody, Franz Boas, George Bird Grinnell.

Committee on American Archeological Nomenclature: C. Peabody (chairman), W. K. Moorehead, E. L. Hewett, J. D. McGuire, F. W. Kelsey.

Committee on the Concordance of American Mythologies: F. Boas (chairman), J. R. Swanton, A. L. Kroeber.

Committee on Nomenclature of Indian Linguistic Families North of Mexico: F. W. Hodge (chairman), W. H. Holmes, F. Boas, A. L. Kroeber, R. B. Dixon, G. A. Dorsey, J. Mooney.

Committee on the Preservation of American Antiquities: W. H. Holmes (chairman), E. L. Hewett (secretary), G. A. Dorsey, Alice C. Fletcher, G. G. MacCurdy, G. B. Gordon, A. L. Kroeber, M. H. Saville, F. W. Putnam, S. Culin, J. Walter Fewkes.

Addresses and Papers

The address of the retiring Vice-president, Professor Franz Boas, on "Race Problems in America" will be printed in *Popular Science Monthly.* "The Mythology of the Central and Eastern Algonkins" was the subject of Prof. Roland B. Dixon's presidential address before the American Folk-Lore Society. It will be printed in the first number of the *Journal of American Folk-Lore* for the current year.

The reports of several standing committees were of such general interest as to be in the nature of papers. That of the Committee on Archeological Nomenclature, Dr Charles Peabody, chairman, was ordered to be printed in full as a report of progress. (See page 114.)

The Committee was continued and asked to collate the terminology already in use.

The report of the Committee on Concordance of American Mythologies was accepted as read by Professor Boas, chairman, and the committee was continued.

Mr F. W. Hodge's report as chairman of the Committee on Linguistic Families North of Mexico was accepted and the committee continued. In this connection it was moved and carried that whenever an author uses a term not acceptable to the committee the editor be instructed to add in parenthesis the term approved by the committee. Mr Hodge also reported for the Committee on Book Reviews of which he is chairman. The report was accepted, and the committee discharged at its own request, with a vote of thanks for its labors on the part of the Association.

Dr George A. Dorsey, recently returned from a year's stay in the Far East, gave an interesting account of his journey through New Guinea. The Papuans of New Guinea are very different physically from the natives of New Britain. The various forms of head-dress were described; also the splendid character of the pile-dwellings that are so striking a feature of the coast region. Mention was made of the wooden drums five to fifteen feet in length, of great adzes of stone and shell, and of wooden bowls carved to represent animals, canoes, etc. All the natives are expert canoe men. The usual form of canoe is the outrigger carrying sails and often of great size.

The Big River (Kaiserin Auguste) was ascended for a distance of 110 miles, where it was still as large as and deeper than the Mississippi at St Louis. The country is flat and covered by extensive forests. Twenty villages (sago gatherers) were passed. The sago palm is cut down near the ground and the top lopped off; the trunk is split and the mass of sago broken up by means of a cylindrical stone set as an adz. The houses differ from those along the coast. They are built on piles, to be sure; but, instead of being squarish, are long, narrow, and absolutely open at each end. This is to provide ventilation, as the natives sleep in long, mosquito-proof, tightly woven, rattan bags. There is usually an altar on which are human images. Skulls (of relatives) are placed on the floor in front of these altars. The canoes are carved at one end to represent the alligator.

"Geological Facts bearing on the Place of the Origin of the Human Race" was the title of a paper by Prof. George Frederick Wright. It is becoming more and more clear, according to Professor Wright, that the glacial period was ushered in by a general

land elevation over all the northern hemisphere (if not the whole world). All the high mountains of the world bear Tertiary strata at elevations of several thousand feet. The effect of such elevation would be to enlarge the continental areas around all their borders and to form land connection between northwestern America and northeastern Asia and possibly between Greenland and northern Europe. It would also connect North America with South America through the West Indies, and Europe with Africa across the Straits of Gibraltar and the shallow belt extending south from Sicily. That there was such a land connection appears from the fact that at the close of the Tertiary period, as the glacial epoch was approaching, there was a remarkable intermingling of the fauna of these connected regions. The elephant and rhinoceros came over from Africa and wandered as far north as Yorkshire, England. The megalonyx and some other South American species wandered into North America as far as Ohio, while the mammoth spread from central Asia across Siberia to northwestern America and wandered to the Atlantic coast and borders of Mexico. Cumulative evidence seems to point to central Asia as the center from which man was dispersed in company with the mammoth over the entire Northern Hemisphere. Central Asia seems to have been the earliest center of civilization. Here in the ancient valley of the Oxus, according to Pumpelly, there are ruins of cities which reach back to 8000 B.C., and here beyond reasonable doubt the Aryan family of languages had its origin. A study of the physical changes which passed over this region contemporaneously with those in Northern America and Europe during the glacial period, and the now undoubted connection of man with the glacial period, rendered very plausible the hypothesis that the changes connected with that period were a contributory cause of the dispersion of mankind from this Asiatic center. Recent investigations show that, during the glacial period, central Asia offered a specially favorable area for the development of man together with both the vegetable and animal species upon which he is dependent for means of sustenance. The whole region is dependent upon irrigation, which is secured by the abundant flow of water proceeding from the melting ice and snow on the lofty mountain heights. At the present time this irrigated belt is a very large one

but during the glacial period when the ice came several thousand feet lower down on the mountains (but never to the plains), the irrigated areas were immensely larger, furnishing sustenance for an indefinitely larger population. But at this time all northern Europe and northern North America were enveloped in glacial ice. But as the glacial period declined, the supply of water from the mountains of central Asia diminished and the oases contracted so as greatly to curtail the field of human occupancy. Contemporaneously with this curtailment in central Asia the fertile plains of Europe and North America were opened to occupation by the melting of the ice, so that streams of emigration entered both Europe and North America from this common center. In America the Aryan speaking races are just entering upon this glacial inheritance. It certainly means a great deal in the settlement of the question of the origin of the human race that we have so many classes of facts pointing to this conclusion, or at least coinciding with this theory.

Professor Wright also presented for inspection three implements recently found, supposed to be of glacial age. The first was one already described by Miss Luella A. Owen in the sixth volume of *Records of the Past*. The evidence is perfectly satisfactory, stated Professor Wright, that it was found in undisturbed loess at St Joseph, Mo., 30 feet or more below the surface. The second was found in the bottom of a pit where the loess was being excavated two or three miles above St Joseph, and in all probability came from the loess. Both these implements are of paleolithic type, and the patina upon them and the oxidation of the surface indicate great age. The third implement, which is of a familiar paleolithic type, was found in a gravel pit excavated in a "kame terrace" on the border of the river Styx in Wadsworth, Medina co., Ohio. As it was found on the floor of the pit, the evidence is not definite with regard to its position in the undisturbed gravel, but everything about it is consistent with glacial antiquity and it is different in almost every respect from the great number of implements found on the surface in that locality. Its character is confirmed by the fact that in a farmer's collection near by another implement almost precisely like it was found, being reported to have been from this same gravel deposit a short distance away.

"Characteristic Traits of the Yana Language of California" was the subject of Dr Edward Sapir's paper. The Yana language of northern California represents a distinct linguistic stock, and was spoken in three dialects (North, Central, and South), of which one (South) is now extinct. Phonetically Yana is characterized by the presence of intermediate, aspirated, surd, and "fortis" stops, by a weakly trilled r, by voiceless l, m, n, and r, and by doubled (long) l, m, and n. Phonetic processes of morphological significance are vocalic changes in the verb stem in the formation, e. g., of causatives and passives, and the change of l to n in nouns to form the diminutive. There are two main forms of speech in Yana, one used by men speaking to men, the other in all other cases; the second form is distinguished from the first partly by phonetic, partly by formal modifications. Morphologically Yana is characterized by having practically only two parts of speech — noun and verb (adjectives, numerals, interrogative pronouns and adverbs, and conjunctive elements are all morphologically verbs). The pronominal elements (possessive and subject) are, in the main, identical in both noun and verb, a grammatical differentiation of these parts of speech being brought about largely by syntactic means. The structure of the verb is rather complicated. Besides pronominal suffixes and tense and mood suffixes, all of which are more strictly formal in character, we have stems of first position, which may, in many cases, be directly employed with the requisite formal suffixes, stems of second or other position, which cannot be used without a preceding stem of first position, and an immense number of derivational suffixes (local, temporal, relational, quasi-modal, etc.). The total number of non-formal elements that follow stems of first position easily exceeds 300. Prefixes do not occur in Yana.

Mrs Zelia Nuttall spoke of "A Curious Survival in Mexico of the Use of *Murex purpura* for Dyeing Purposes," producing, by way of demonstration, two woven fabrics colored purple. The industry is known to exist in Nicoya, Costa Rica. Hartman found it also on the peninsula of Guanacaste, Costa Rica.

Drs Charles Peabody and George Grant MacCurdy made a "Presentation of Eoliths from Boncelles," near Liège, Belgium, they having visited that station together last summer. Boncelles

lies in the Ardennes, at a height of 265 meters above the sea. Here M. de Munck discovered eoliths in a flinty layer surmounted by a thick deposit of upper Oligocene sands. The age of the latter is determined by numerous fossil shells, including *Cytherea beyrichi*, *Pectunculus obovatus*, and *Cardium*. According to Rutot the deposit in which the eoliths occur is of middle Oligocene age. The Boncelles eoliths are therefore older than those of Cantal.

Another paper dealing with European archeology, "Some Recent Paleolithic Discoveries," was presented by Dr George Grant MacCurdy. This paper appeared in the October–December issue of the *American Anthropologist*.

The papers by Dr C. Hart Merriam: "Mythology of the Mewan Tribes"; "Additional Notes on the Yumme or Mourning Ceremony"; "The Creation Myth of the Pá-we-nan"; and "Battle of the First People with Dakko, the Sun God — a Hamfo Myth," will appear in the *Journal of American Folk-Lore*.

Mr Stansbury Hagar discussed "Izamal and its Celestial Plan." At Izamal in the north-central part of Yucatan is found a group of ruins which marks the site of an ancient theogonic center of the Maya. Landa, writing in the latter half of the sixteenth century, gives the earliest reference to them. He mentions eleven or twelve edifices and describes one. Lizana, writing sixty years later, found only five edifices, but he gives us a detailed description of their comparative location and of the traditions associated with them, which reveals the basic plan of Izamal. This plan is confirmed by details supplied by the modern travelers, Stephens, Norman, Charnay, Le Plongeon, and Holmes. Lizana says that the buildings were temples; they stood upon the summit of pyramidal mounds typical of Mexico and Central America, as well as of Yucatan. Toward the north was the highest temple, called Kinich Kakmo, Sun-Eye, and Ara, or Parrot of Fire, because the sun was supposed to descend upon it at noon and to consume the offerings upon its altar, as the fiery-plumed ara descends from the sky. These symbols were associated with the time of the June solstice. The Mayan ritual refers to the descent of an "angel" upon the altar at this time and to the new fire festival. A similar Mexican tradition mentions the descent of a bird in a luminous constellation. The symbolism

therefore seems to refer to the annual descent of the sun from the sign Cancer, the northernmost point in the solar journey, at the solstitial moon of the year.

Toward the west was the mound and temple dedicated to Itzamna as lord of the dead. It contained the image of a hand, because on this spot Itzamna healed those who were ill and restored the dead to life by laying his hand upon them, whence it bore the name Cab-ul, the Working Hand. In this aspect Itzamna may be identified with the death god A of the codices, who rules the Mayan uinal Xul, or End, in October–November, and represents Scorpio, the death sign.

Toward the southwest was the temple of Hunpictok, the Warrior, or the Commander of Eight Thousand Lances. This was an arsenal and the headquarters of the army. Beside one of the two colossal heads upon the facade of this pyramid may still be seen the double spiral xonecuilli symbol, which connoted the sign and constellation Sagittarius for the Mexicans. It also referred to the gods of war, and to Orion, the Warrior, who represented Sagittarius as a catasterism.

At the south stood the temple of Itzamna in the aspect of the Cosmic Spirit, represented in the codices by the god D and the sign Capricornus.

Finally Lizana describes the temple called Papp Hol Chac, House of Heads and Lightnings. He does not locate it, but Charnay writes of it as facing the Kinich Kakmo pyramid from the south. In it dwelt the priests who administered justice and foretold the future. Apparently the reference is to the *tlahtouani* or diviner of the Mexicans, Maya *chilan*, who imparts the wisdom supposed to be obtained from the spirits of the dead, and who is associated with the constellation *Teoyaotlatohua*, our Libra-Scorpio. In this instance the former sign seems to be represented. Lizana also mentioned four roads which extended from Izamal toward the cardinal points.

Each of the five edifices described by Lizana was associated with a zodiacal sign. Their relative positions correspond correctly to those of the signs they represent. The original plan of Izamal consisted of twelve temples, each representing a zodiacal sign in its

proper relative position in the zodiacal circle. These structures were grouped around an undefined central space from which the roads divided the country into four provinces corresponding to the celestial and cosmical quartering of the solar path by the solstices and equinoxes. The basis of this plan was therefore the imitation upon earth of the supposed celestial plan. It is identical with the plan of Cuzco, the Inca capital,[1] a plan most appropriate to a sacred city of priests who watch the stars. The Izamal symbols repeat throughout those of Peru, indicating intercommunication, direct or indirect, between the Maya and the Peruvians at some time.

In "Social Institutions of the Tinglayan Igorrotes," Dr Daniel Folkmar gave some of the results of his work for the Ethnological Survey of the Philippine Islands while Lieutenant-Governor of Bontoc.

The following papers were read by title:

Dr Clark Wissler: Measurements of Mixed and Full-blood Dakota Children.

Dr Aleš Hrdlička: Height in the American Indians.

Dr Walter Hough: Memorial Address for Otis T. Mason.

Prof Henry Montgomery: Archeological Explorations in Manitoba.

Mr William A. Bryan: Some Inventions of the Ancient Hawaiians.

Dr E. L. Hewett (secretary): Committee Report on the Preservation of American Antiquities.

Miss Louise Rand Bascom: Ballads and Songs of Western North Carolina.

Dr John P. Cross: Folk-lore from the Southern States.

Mr Phillips Barry: Folk-music in America.

Mr F. B. Washington: Notes on the Northern Wintun Indians.

Mr Leo Frachtenberg: Traditions of the Coos Indians of Oregon.

Dr Clark Wissler: Observations on Esoteric Narratives on the Source of Myths.

Dr Frank G. Speck: Sketch of the Yuchi Language.

Mr George Will: Songs of the Western Cowboys.

Miss Mary W. F. Spears: The Importance of Recording Negro Lore, Dialects, and Melodies.

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[1] See author's paper on Cuzco, the Celestial City, in *Proceedings Internat. Cong. of Americanists*, New York, 1902.

REPORT OF THE COMMITTEE ON ARCHEOLOGICAL NOMENCLATURE

The following report has been prepared by Prof. John H. Wright, Mr J. D. McGuire, Mr F. W. Hodge, Mr W. K. Moorehead, and Dr C. Peabody, chairman. The recent illness and death of Professor Wright deprived the Committee of his advice and suggestion during the final drafting; with this exception the report is unanimous.

To the President and Members of the American Anthropological Association:

The Committee on Nomenclature of specimens has the honor of submitting the following report. It covers only certain divisions of objects in clay and of objects in stone; the departments referred to seem to the Committee to be peculiarly suited to a rigid examination resulting in definition, classification, and meaning.

In all, the object of the Committee has been to reduce everything to its lowest terms, to use English words, if possible, and words that shall be perfectly clear in denotation to scholars at home and abroad, and to adhere as closely as may be to classifications already made standard.

As has been well said, the difficulty in classification and nomenclature comes from our lack of complete and detailed knowledge.

The classifications here offered and the definitions here proposed in some detail are based so far as is possible on form alone. It is of course taken as an axiom that a classification based on form assumes no theory of the development, interrelation, or conventionalization of forms or types in any manner whatsoever; it has been the particular aim of the Committee to avoid or to get rid of those classes and names that are based on uses assumed but not universally proved for certain specimens.

Should the attempt meet with the favor of the members of the Association, it should be possible at a future date to apply the same principles to a detailed examination of other stone specimens and to specimens in shell, basketry, and textiles, so far as has not been already done.

Articles in Clay

Simple vessels in clay may be presumed to cover all forms except eccentric or conventionalized (i. e., animal-shaped) forms on the one hand, and discs and pipes on the other.

It is suggested by the Committee that members of the American Anthropological Association having occasion to describe clay vessels, may classify them: first, as to material, as consisting of clay, sand, shell, and their combinations, and as possessing certain general ground-color;

second, as to manufacture, as sun-dried or fired, as coiled or modeled — with the variations and steps of each process; third, as to form; fourth, as to decoration, as plain, stamped, incised, or painted. With regard to form, the Committee begs to offer the following definitions and suggestions in classifications.

[*Note.*—In all cases measurements are considered as referring to an upward direction.]

A simple vessel must consist of a body, and may have a rim, neck, foot, handle, or any combination.

1. *Body:* A formation capable of holding within itself a liquid or a solid substance.

2. *Rim:* (*A*) A part of the vessel forming the termination of the body. (*B*) A part of the vessel recognizable by a change in the thickness of the material in the terminal sections.

3. *Neck:* A part of the vessel recognizable by a more or less sudden decrease in the rate of increase or decrease of the diameter.

4. *Foot:* An attachment to the vessel which serves as support to the body when upright.

5. *Handle:* A part of the vessel consisting of some outside attachment, not serving as support.

Body: It is suggested that in comparing the forms or cross-sections of vessels particular attention be paid to the proportion of the diameter to the height, to the rate of change of this proportion, to the place of change of direction in this proportion, and to refer to the following definitions of the two dimensions:

Height: the distance from the base to a horizontal plane passing through the most distant part of the rim.

Diameter: the distance from any one point on the sides to any opposite point on the sides, measured on a plane at right angles to the height.

Base: the point of contact or a plane of contact of the body with a horizontal surface.

Types. *Body:* These are so varied, depending on relative height and diameter of the cross-section, that an analysis is too cumbersome to be of service to general reference.

Neck: 1. Expanding.
2. Cylindrical.
3. Contracting.
4. Combinations.

Lip: A part of the neck or body recognizable by a suddenly increasing diameter of neck or body, that continues increasing to the rim.

Foot: 1. Continuous.
(*A*) Expanding.
(*B*) Cylindrical.
(*C*) Contracting.
(*D*) Combinations.

Feet: 2. Not continuous.
Differentiated by
(*A*) Number.
(*B*) Angle with the horizontal.
(*a*) Expanding upward.
(*b*) Perpendicular.
(*c*) Contracting upward.

Handles. Types.
Differentiated by
1. Number.
2. Position on the vessel.
(*A*) Body.
(*B*) Neck.
(*C*) Foot.
(*D*) Combinations.
3. Form.
(*A*) Continuous with body or neck.
(*B*) Not continuous with body or neck.
(*a*) With constant direction.
(*b*) With varying direction.
(*c*) With reëntry upon vessel.
(*A'*) Round.
(*B'*) Flat.
(*C'*) Coiled.

Articles in Stone

Chipped Stone

I. *Knives and Projectile Points.*
Larger = 5 cm. (2 inches) or more in length.
Smaller = less than 5 cm. (2 inches) in length.
Types.
1. Without stem.
(*A*) Without secondary chipping (= flakes).
(*B*) With secondary chipping.
(*a*) Pointed.

(*a'*) At one end.
Base concave.
Base straight.
Base convex.
Sides convex.
One side convex, one side straight.
(*b'*) At both ends.
(*b*) Ends convex.
(*c*) More or less circular.

2. With stem.
(*A*) Stem expanding from base — with or without barbing.
(*a*) Base concave.
(*b*) Base straight.
(*c*) Base convex.
(*B*) Stem with sides parallel — with or without barbing.
(*a*) Base concave.
(*b*) Base straight.
(*c*) Base convex.
(*C*) Stem contracting from base — with or without barbing.
(*a*) Base concave.
(*b*) Base straight.
(*c*) Base convex.

Note 1. — The proportion of the length of the base to its breadth should be observed.

Note 2. — The notches in barbed specimens may be vertical, horizontal, or with varying diameter.

Note 3. — The angles formed by the faces (i. e., "bevel") should be observed.

II. *Scrapers.*
Types.
1. With one or more scraping edges.
2. Without or with notch (including circular).

III. *Perforators.*
Types differentiated by
1. Cross-section.
(*A*) Round.
(*B*) Quadrangular or irregular.
2. Stem.
(*A*) Without stem.
(*B*) With stem.

(*a*) Stem expanding gradually.
(*b*) Stem expanding suddenly.

IV. *Hammerstones.*

Types.

1. Spheroidal.
2. Discoidal. { (*a*) "Pitted." (*b*) Not "pitted."
3. Elongated. { (*a*) Grooved. (*b*) Not grooved.

Note 1. — Practical or ornamental serration may be applied to many forms.

Note 2. — Combinations of the types may appear in one specimen and any type may be infinitely varied by individual caprice.

GROUND STONE

I. *Problematical forms.*

1. Laminæ (i. e., flat "spuds," "gorgets," and pendants).

Types.

(*A*) Spade-shaped.
(*B*) Ovate.
  (*a*) Sides concave (not common).
  (*b*) Sides straight.
  (*c*) Sides convex.
(*C*) Leaf-shaped.
(*D*) Spear-shaped.
(*E*) Rectangular.
  (*a*) Sides concave.
  (*b*) Sides straight.
  (*c*) Sides convex.
(*F*) Shield-shaped.
(*G*) Pendants.
  (*a*) Celt-shaped.
  (*b*) Rectangular.
  (*c*) Oval or circular.

2. Resemblances to known forms.

(*A*) Animal-shaped stones.
(*B*) Boat-shaped stones.
(*C*) Bar-shaped stones.
  (*a*) Longer, resembling true "bars."
  (*b*) Shorter, "ridged" or "expanded gorgets."
(*D*) Spool-shaped stones.
(*E*) Pick-shaped stones.

(*F*) Plummet-shaped stones.
(*G*) Geometrical forms.
(*a*) Spheres.
(*b*) Hemispheres.
(*c*) Crescents.
(*d*) Cones.

3. Perforated stones with wings.
(*A*) Wings with constant rate of change of width.
(*a*) Wings expanding from perforation.
(*b*) Wings with sides parallel.
(*c*) Wings contracting from perforation.
(*B*) Wings with varying rate of change of width.

II. Tubes and tube-shaped stones.
III. Beads.
IV. Pitted stones other than hammerstones.

The Committee finally takes pleasure in thanking the following members for assistance rendered:

Prof. N. H. Winchell, University of Minnesota, Minneapolis; Prof. Henry Montgomery, University of Toronto; Prof. William N. Bates, University of Pennsylvania, Philadelphia; Dr H. Kinner, St Louis; Dr George Grant MacCurdy, Yale University; Mr M. Raymond Harrington, New York; Mrs Zelia Nuttall, Coyoacán, D.F., Mexico; Mr C. C. Willoughby, Harvard University; Dr Walter Hough, National Museum; Dr Nicolas León, Mexico; Mr F. S. Dellenbaugh, New York; Prof. F. W. Putnam, Harvard University; Dr John M. Wulfing, St Louis; Mr Harlan I. Smith, American Museum of Natural History, New York; Rev. J. D. Marmor, New York; Mr Christopher Wren, Plymouth, Penn.; Dr A. W. Butler, Indianapolis; Dr H. W. Shimer, Boston; Prof. W. H. Holmes, Washington; Mr Richard Herrmann, Dubuque, Iowa; Dr H. F. ten Kate, Tokyo; Dr J. B. Ambrosetti, Buenos Aires.

BOOK REVIEWS

The American Indian as a Product of Environment, with Special Reference to the Pueblos. By A. J. Fynn. Boston: Little, Brown and Company, 1907. 8°, 275 pp., ill.

This work is the outgrowth of a degree thesis originally prepared for the University of Colorado, and deals with the old problem of the relation of man to environment, taking most of its illustrations from the sedentary tribes of the Southwest, of which the author has personal knowledge. It notices in succession flora, fauna, and human inhabitants, homes, food and clothing, government, education, industries, religion, and ceremonies.

The treatment is good and shows close study of geographic and climatic cause and effect, but the author is frequently in error in his specific statements, chiefly from following such general, and therefore unreliable, theorists as Morgan and Brinton. For instance, the clan system, instead of being universal as Morgan taught, is now shown by Swanton to have been of extremely limited range. The chief usefulness of the dog was not as a hunter, but as a sentry at the home camp. "Superstition" seems hardly the word in an ethnologic treatise, and it is extremely doubtful if Indian hospitality had its reason in the fear of possibly offending a god in disguise. The statement that among the Pueblos "several rabbits were killed in the course of a year" hardly does justice to the Hopi and Zuñi rabbit drives. The author's chapter on the effect of civilization upon the native race covers the ground very effectively.

James Mooney.

True Indian Stories, with Glossary of Indiana Indian Names. By J. P. Dunn. Indianapolis: Sentinel Printing Company, 1908. 16°, 320 pp., ill.

The author of this little volume of studies from the pioneer days of Indiana is the secretary of the State Historical Society, a trained writer and investigator, and our most competent authority on all that relates to the Indian tribes of the Ohio valley. The sketches were originally written for newspaper publication and have been remodeled for more permanent form.

Of the dozen stories presented nearly every one is in some measure known to students of the early history of the Middle West, but never before have all the facts been so well hunted down, brought into connected sequence, and told in a way to convey their full meaning of tragedy

and human interest. Of special interest are the stories of the death of the witches, by command of the Shawnee Prophet; the account of William Wells, the Kentucky captive and interpreter, killed while defending the prisoners at the Fort Dearborn massacre; the "Tragedy of the Falls," the murder of a party of friendly Indians and the trial (and later execution) of the murderers, where "every juryman wore moccasins and carried a hunting knife;" the narrative of Frances Slocum, the lost captive of Wyoming; and "The Trail of Death," telling of the forced removal of the Potawatomi in 1838.

An index glossary of 67 pages gives the correct Indian form and etymology of nearly all the local names in the state, of Indian origin or connection. The numerous illustrations are nearly all of special historical value. The volume might well be used as a history reading book in the schools of the Ohio Valley region.

JAMES MOONEY.

The Application of Statistical Methods to the Problems of Psychophysics. By F. M. URBAN, Ph.D., University of Pennsylvania. Philadelphia: The Psychological Clinic Press, 1908. 8°, 221 pp.

This book is written for the modern psychologist, treating quite fully one of his very important problems. In the same way that statistical methods and the application of the probability concept have furnished a ray of hope to the anthropologist when dealing with the intricate problems confronting him, they have appealed to the psychologist. It is not our purpose to give a digest or even comment on the present work in its entirety, because it is not primarily important to anthropologists. On the other hand, the intricate methods of statistical procedure are for some reason so difficult of approach and their understanding depends so much on the minute details of presentation that any new demonstration of their applicability and significance will be welcome to anthropologists, even though the subject matter be entirely psychological.

Dr Urban states rather clearly that the probability and frequency concepts must underlie every procedure with phenomena in which the frequency of a given observation result is a part of the data. Of special interest to the psychologists is Dr Urban's claim that judgments of relativity when expressed in terms of quantity are also susceptible to treatment by the same concept, if indeed they be explicable by any other concept whatsoever. One of the first and in some respects the only exact foundation to psychophysics was conceived in Weber's law and the work of Fechner with lifted weights by which efforts were made to find a unit of experience that was equivalent to a unit of quantity. Taking this as a

starting point, the author repeated the experiments to secure a series of observations which in turn were subjected to keen analysis from the standpoint of statistical methods. While in a certain sense the search of the early investigators for a unit of experience was successful, it remained for Dr Urban to point out clearly that the assumption of such a unit as an act of judgment was susceptible to direct treatment by the method of errors. Now, the whole basis of the theory of error probability may be said to be psychological, the correction and approximation of observations in engineering, astronomy, etc., being a rectification of the judgments made by the observers. Since the author has treated very clearly some of the underlying concepts of the statistical method, his publication may be recommended to those interested in the application of these methods.

In his monograph the author presents three subjects: the results of experiments with lifted weights in which judgment was made as to relative values, some ways of applying statistical methods to the results of such observations, and a metaphysical discussion of psychological events as opposed to objective facts. By an ingenious calculation the author determines what may be called psychometric functions, pertaining to the judgments observed by him. As to how far his interpretation as to the relation between mental and objective events will prove satisfactory is a matter which cannot now be determined. Yet the point that "there is no difference between our treatment of psychological observations and the methods by which physical observations are treated, and we may say in general that the mathematical representation of empirical observations is nothing else than an idealization of experience" is, within its meaning, well taken. Unfortunately many students fail to perceive this truth with respect to the more statistical phase of anthropological work.

CLARK WISSLER.

Kraniologische Studien an Altägyptern. Mit 14 eingedruckten Abbildungen und 4 Tafeln. Inaugural-Dissertation zur Erlangung der philosophischen Doktorwürde der Hohen philosophischen Fakultät der Universität Zürich, vorgelegt von BRUNO OETTEKING *aus Hamburg. Begutachtet von Herrn Professor Dr* RUDOLF MARTIN. Braunschweig: Vieweg, 1908. 90 pp.

This study of ancient Egyptian skulls served as the author's thesis for the Ph.D. at the University of Zürich under Professor Martin. It is based on the examination and measurements of 161 mummy-heads collected in 1896 by Professor Martin, chiefly on the necropolis of Thebes, and twenty-one others, of which nineteen came from Sakkára. After

describing the material (pp. 1–11), the author takes up in turn the detailed study of the skulls (pp. 11–55) and the race-question (pp. 55–65). Among the conclusions from the craniological point of view are the following: The ancient Egyptian type is dolichocephalic-mesocephalic, with but a small (6.9 per cent.) brachicephalic element. The prominence of the occipital squama is characteristic. The face is mesoprosopic, the nose mesorrhine, the eye mesoconch. The ancient Egyptians were an orthognathic race. Taking all things into consideration their craniological type was of no extreme form, but Pruner Bey's distinction between the *fine* and the *gross* types (represented to-day in the Fellaheen and the Copts) is confirmed. The question of negroid influence upon the ancient Egyptian skull-form is still open, likewise the question in how far the gross type and the mixed form influenced by the negroid are one and the same. There seems also some evidence that with rise of civilization occurred an increase in the size of the brain (influencing the size and form of the skull), and a corresponding decrease with retrogression in culture.

Concerning questions of race, Dr Oetteking holds: 1. So far as is now known, man appeared in Egypt in the present geological period (alluvium). 2. The Egyptian people is ethnically composite. 3. Its elements are: Bushmen, Negroes, Libyans, and Hamito-Semites. 4. The influence of these races upon the Egyptian skull cannot yet be given exact craniometric expression. 5. The fundamental division into *fine* and *gross* types is demonstrable at all periods of the ethnic development of the Egyptians. 6. The average type of the ancient Egyptian resembles most the Hamito-Semitic.

A good bibliography (pp. 66–69, two columns to the page) is appended.

ALEXANDER F. CHAMBERLAIN.

La Parole Humaine. Études de philologie nouvelle d'après une langue d'Amérique. Par A. BERLOIN. Paris: Montréal; 1908. 221 pp.

This is a curious book. Twenty or more years ago the author came into contact with the Canadian Algonquin (the linguistic material is largely Cree and Algonquin of Cuoq, with some Ojibwa), and, interested in their "Algic" speech, as he calls it, using Schoolcraft's invention, he went into the matter deeper and deeper, finding in this savage language "marks of affinity with European tongues, relations of physical and metaphysical order, and besides, curious concordances with the Bible." Pages 20–118 are occupied by an interesting sketch of the phonetics, morphol-

ogy, and grammar of the Algonquin language, and some hazardous views in semantics and etymology are set forth, particularly as to the significance of consonants and vowels. Chapters X–XII (pp. 118–170) are concerned with "linguistic affinities" between the "Algic" and various Aryan tongues (Sanskrit, Greek, Latin, German, English, etc.), which are thought to be beyond the range of mere chance. Such, e. g., are the following:

Algic *asin*	German *stein*.
aki (land)	Latin *ager*.
kin (pointed)	English *keen*.
ikwe (woman)	Latin *uxor*.
pim (fat)	Latin *opimus*.
tip (measure)	Latin *typus*.
wiw (woman)	English *wife*.

By means of vocal and consonantal interchanges many more of such "concordances" are made out. Their impossibility as linguistic evidence is seen when one glances into the etymology, e. g., of the English word *keen* or the Latin *opimus*. The author's exploitation of the three "fundamental phonemes *a*, *i*, *o*" is interesting but quite *outré*. Some of the grammatical "coincidences" are even more so, — it is asked, whether the Latin future *-bo*, imperfect *-bam*, German past participle *ge-*, are not identical with "Algic" *-wi*, *-ban*, *ki-*. All this leads the author to the conclusion that the "Algic" is rather the primitive trunk of Indo-European speech than a mere sister-language of the family. After chapters on natural language and the philosophy of language, M. Berloin goes still farther afield, declaring (p. 192) that "from whatever side we set out, we reach Algic, and, why, therefore, is not Algic the natural language of man?" In the last brief chapter (pp. 207–216) he asserts that possessing the characteristics here discussed, "Algic" is really the primitive language of mankind, having escaped the general confusion of Babel, that linguistic cataclysm which submerged the rest. In an out-of-the-way corner of America lives yet "the tongue spoken by our first parent in Eden, when his mind awoke to the knowledge of divine and human things and his mouth sought to utter them at the initiative of the Creator himself." But there is more poetry than truth in these words of an aged enthusiast!

ALEXANDER F. CHAMBERLAIN.

Ortsnamen und Sprachwissenschaft. Ursprache und Begriffsentwicklung. Von Dr C. TÄUBER. Mit 1 Titelbild. Zürich: Verlag. Art. Institut Orell Füssli, 1908. 259 pp.

This is another excursion into the primitive speech of man, like the book of Trombetti, *L'unità d'origine del linguaggio* (Bologna, 1905), in which it is sought to prove "the original linguistic unity of Europe, Africa, Asia, Oceania, and even America." Trombetti's work came to the attention of the author only in time for him to note (pp. 203–207) that his own conclusions were largely confirmed. On the basis of Indo-Germanic comparative philology, using Curtius as chief authority, Dr Täuber decides that there are two fundamental laws of language: (1) the "Urwort" is a substantive of the most primitive, concrete signification, (2) these words are monosyllabic. Such "original roots" of language are: *ma* (food, drink), *pa* (food, protection), *na* (fluid), *ta* (wood), *la* (meadow, water), *ka* (cattle). The book is devoted to the task of unmasking these roots wherever they lie hidden in the innumerable place-names of the whole continent of Europe, etc. The chronological order of the appearance of these "Urworte" the author considers to have been *ma*, *pa*, *na*, *ta*, *la*, *ka*, representing, respectively, the ideas of milk-drinking (infant-mother), the father, the feeling of wetness, the wood as dwelling, the feeding-place of cattle and the water-place, the cattle. This argument is equaled only by some of the philological statements elsewhere in the book. The roots *pa* and *par*, e. g., appear in Latin *papa* and *pater*, *pratum*, *palma*, German *breit*, English *full*, etc., besides in many place-names of Romance, Teutonic, and Slavonic origin. According to Dr Täuber the root *tar* occurs in numerous Slavonic and Siberian place-names, and is even to be found in Argentina and Brazil; also in other regions of America, as the following extract shows (p. 201): "In Mexiko hiess das erste der in Anahuac eingewanderten Völker im Munde ihrer Unterwerfer und Nachfolger, der Azteken, *Tolteken*. Sind das eine Art 'Buschmänner'? '*Tolen*' oder '*tule*' bedeutel nämlich 'Binse'. Es gibt einen Ortsnamen *Tollan* (= 'Binsenort'), und 'Tollan,' jetzt *Tula*, war ebenfalls eine Stadt der Tolteken. *Tulare* heisst ein See in Kalifornien. *Toronto* in Kanada soll ein indianischer Name sein und bedeuten '*Baum* im Wasser.'"

In this way the author claims to have "bridged over the yawning gulf between natural science and philology," and "made clear the embryonal development of human language and the human mind" (p. 207). The roots of language everywhere are the same and their evolution from the "Ursprache" can now be traced in all their later exten-

sions and combinations. This can easily be done if one is willing to derive German *Wald*, English *Wales*, Latin *Velletri*, French *Gascogne*, Spanish *Viscaya*, all from one and the same root, or to connect in like manner *Tibet*, *Trieste*, and *Toronto*.

The book is well printed and is provided with a very good index.

ALEXANDER F. CHAMBERLAIN.

Les Indiens Jibaros. Étude géographique, historique et ethnographique. Dr RIVET. Paris: 1908. 114 pp., 25 figs., map.

This monograph, reprinted from *L'Anthropologie* for 1907 and 1908, is a welcome addition to the anthropological literature of South American primitive peoples. The Jivaros, whose language forms a distinct stock, occupy a triangular area in Ecuador, bounded on the west by the eastern Cordillera of the Andes, on the northeast and east by the river Pastaza (from where it leaves the Cordillera to its junction with the Amazon), on the south by the Amazon itself (from the mouth of the Pastaza to that of the Santiago), and the Cordillera de Condor extending west to east between the valleys of the Santiago and Chinchipe. Some of their numerous tribes hardly know the white man at all, an occasional adventurous rubber-hunter or enthusiastic missionary being the only members of our race to enter upon certain parts of the Jivaro domain. There are, however, in this region a few settlements of *Macabeos*, as the whites are termed, such as Canelos, Macas, Gualaquiza, and Zamora, of which the first had in 1890 a population of 800, and the last less than 200, including Indians. The number of the Jivaros has greatly decreased since the coming of the Europeans, but there still exist some 20,000. The most populous tribes are the Aguarunas, Muratos, Antipas, and Huambizas. Physically the Jivaros "are the finest and most robust type" met with by the author in Ecuador. Bamboo tubes in the lobe of the ear, lip-sticks, face and body painting, "crowns," etc., are some of their ornamental devices. Houses, and not villages, are their characteristic places of abode, and the location of these changes about every six years. The furniture is not extensive, and any one who has three sets of clothing is accounted rich in his tribe. Fowls, pigs, and dogs are their only domestic animals, besides parrots and an occasional monkey. The dogs are kept tied day and night to the foot of the beds of the women. Excessive use of tobacco is a vice caught up from the whites. The national weapon is the spear; they use also the *sarbacan*, or blow-pipe, and the throwing-stick. The Jivaro is an early riser, being up at 3 A. M., to recite, as the head of his family, the tribal history; at 6 P. M. he is always home again — in normal

times never being out at night. He works about two hours a day when at home. His knowledge of woodcraft is great. When not fishing and hunting he visits his relations and friends, for which procedure there is a regular primitive etiquette. Polygamy is in vogue and the position of woman is quite low. It is doubtful whether the Jívaros ever practised the custom of the *couvade*, which has been attributed to them by certain writers. No true social groups and not even "the least embryo of government" exist among these Indians. The tribes are nothing more than "the *ensemble* of allied and often related families ready in case of need to render each other aid and assistance." Trade and commerce are in their infancy, the traffic in salt being perhaps the most important on account of the rarity of this article and the jealousy with which the neighboring peoples exploit the salt deposits in the forests. According to Dr Rivet "a state of war is the normal condition of the Jívaros," but the "courage" of these Indians resembles the cunning of the cat, rather than the valor of the warrior elsewhere. The Jívaros are famous for their *tsantsas*, or mummified human heads, the most esteemed war trophies, to the consideration of which pages 73–90 are devoted. Sometimes heads of animals (Dr Rivet cites the case of a sloth) are treated in a similar manner.

In spite of the general tendency of the missionaries to ascribe poverty of religious ideas or an almost entire absence of them to these Indians, their religious and superstitious acts, like their traditions, about which so little is known, are numerous. The Jívaro have deluge and creation legends, and traditions concerning race-origins. Their highest divinity is *Iguanchi*, which term the missionaries have now appropriated for the devil, designating the God of the Christians by the word *Yusa* (from *Jésus* or *Dios*). It is *Iguanchi* who directs all the important acts in the life of the Jívaro, and the means of entering into communication with him is by drinking an infusion of *natema* (*Banisteria caapi*) on a high and isolated hill. The idea of natural death is not entertained by the Jívaros, all diseases and all deaths being considered the work of an enemy through the medium of a "medicine-man" or sorcerer. These Indians believe in another life, as is shown by their funeral rites, but the other life is nothing more than the continuance of this on earth. Of their festivals the chief ones are (besides the marriage ceremonies) the women's festival, celebrated when the *yuca*, or the banana trees, planted by the newly-married couple, are ripe; the tobacco festival (so-called by reason of the large amount of the decoction consumed), which has for its object the securing of fertility in the fields, the fattening and prolific reproduction of pigs, etc.; and the *tsantsa-tucui*, or festival of the *tsantsas*, a sort of

expiatory ceremony. Of their arts, pottery seems the most noteworthy. Dance, music, and song are not in high honor — the dances of the Jivaros, indeed, lack grace. Their morality is utilitarian, and the Jivaro is neither good nor bad. As to brains and character, "the Jivaro is one of the most intelligent Indians of South America, when alcohol and *natema* have not exercised upon him their disastrous influence." He has an irresistible passion for freedom and a perfect horror of subjection. His idleness has been exaggerated; it is perhaps rational. As to the chance of civilizing the Jivaros, Dr Rivet takes a pessimistic view, holding that "where the missionaries of the 18th century, more experienced and more zealous, have utterly failed, those of our own day have but little chance of success." To this interesting sketch of a people "doomed to disappear swiftly with a rapid peopling by the whites of the provinces of the upper Amazon," Dr Rivet promises to add later a special memoir on the Jivaro language.

ALEXANDER F. CHAMBERLAIN.

A Bibliography of Congo Languages. By FREDERICK STARR. University of Chicago, Department of Anthropology, Bulletin V. Chicago: 1908. 8°, 97 pp., ill.

Professor Starr's *Bibliography* is issued as a foundation, as solid as one man could make it, upon which other students of African linguistics will build as opportunity and persistence offer them the chance to do so. Meanwhile, to those only incidentally interested in this particular field, Professor Starr's pages leave on the mind of one who glances over them, an impression, curiously distinct and most unusual for an ordinary bibliographical contribution, regarding the character of the language with which it deals. The title pages reproduced in facsimile have been selected so as to show not alone the rare, but also the typical, works of different periods. Those of contemporary dates are reënforced by photographs of several of the mission offices in which a large number of these books were printed, and of some of the native workers. Another and novel feature is the series of small portraits, fairly complete, of the authors who contribute three or more titles included in the bibliography.

G. P. W.

SOME NEW PUBLICATIONS

BELLO Y RODRIGUEZ, SILVESTRE. Le fémur et le tibia chez l'homme et les anthropoïdes (variations suivant le sexe, l'âge et la race). Paris: G. Jacques, éditeur, 1909. 8°, 120 pp., 3 pl., 14 figs.

CARTAILHAC, ÉMILE, *et* BREUIL, HENRI. Peintures et gravures murales des cavernes paléolithiques. La Caverne d'Altamira a Santillane près San-

tander (Espagne). Imprimerie de Monaco: 1906 [1908]. 4°, viii, 287 pp., 37 pls., figs.

DEBENEDETTI, SALV. Excursión arqueológica á las ruinas de Kipón (Valle Calchaquí—Provincia de Salta). Facultad de Filosofía y Letras. Publicaciones de la Sección Antropológica, No. 4. Buenos Aires: 1908. 8°, 55 pp., 35 figs., 1 pl.

DELAURE, JAKOB ANTON. Die Zeugung im Glauben, Sitten und Bräuchen der Völker. Verdeutscht und Ergänzt von Friedrich S. Krauss und Karl Reiskel. Leipzig: Deutsche Verlagaktiengesellschaft, 1909. 4°, 4 ll., 349 pp., 312 figs.

HENRY, VICTOR. La magie dans l'Indie antique. 2e édition. Paris: Librairie Critique, 1909. 12°, xl, 288 pp.

HERNÁNDEZ, JUAN MARTINEZ. El Chilam Balam de Maní ó Códice Pérez. Edicion cuidadosamente revisada con un prologo. Merida de Yucatan: Imprenta del Colegio San José de Artes y Oficios, 1909. 18°, 18 pp.

HODGES, WILLIAM ROMAINE. Carl Wimar. A Biography. Catalogue of pictures and illustrations furnished by Charles Reymershoffer. Galveston, Texas: Published by Charles Reymershoffer, 1908. 8°, 37 pp., plates.

A sketch with a list of the known canvases of an artist celebrated for his Indian pictures.

LOWIE, ROBERT H. The Northern Shoshone. (Anthropological Papers, Amer. Mus. Nat. Hist., N. Y., 1909, II, pt. 2, pp. 163–306, 1 pl., 20 figs.)

MARETT, R. R. The threshold of religion. London: Methuen & Co. [1909]. 16°, xix, 173 pp.

Chapters on: Pre-animistic religion; From spell to prayer; Is taboo a negative magic?; The conception of *mana*; A sociological view of comparative religion.

OUTES, FÉLIX F. Alfarerías del noroeste Argentino. (De los Anales del Museo de La Plata, Buenos Aires, 1907, 2ª ser., I, 5–49, 8 pls., 32 figs.)

PALMA, RICARDO (hijo). La uta del Peru. Tesis para el bachillerato en medicina. Lima: Imprenta de "El Lucero," 1908. 8°, 104 pp., 7 pls.

PLOSS, HEINRICH, *und* BARTELS, MAX. Das Weib in der Natur- und Völkerkunde. Anthropologische Studien von Dr. Heinrich Ploss und Dr. Max Bartels. Neunte starke vermehrte Auflage. Neu bearbeitet und herausgegeben von Dr. Paul Bartels. Leipzig: Th. Griben's Verlag (L. Fernau), 1908. 2 vols. 8°, xxiv, 986 pp., pl. I–V, figs. 1–425; viii, 884 pp., pl. VI–X, fig. 426–700.

TELLO, JULIO C. La antigüedad de la sifilis en el Perú. Universidad Mayor de San Marcos, Facultad de Medicina. Lima: 1909. 8°, 208, iv pp., 15 pls.

UHLENBECH, C. C. Grammatische onderscheidingen in het Algonkisch, voornamelijk gedemonstreerd aan het Otchipwe-Dialect. (Reprinted from Mededeelingen der Koninklijke Akademie van Wetenschappen, Afdeeling

Letterkunde, 4e Reeks, Deel X.) Amsterdam: Johannes Müller, 1909. 8°, 20 pp.

VAN EPPS, PERCY M. Cayadutta. A great pre-Colonial Mohawk village site. (Reprint from 2d Annual Schenectady County Historical Society, Schenectady, N. Y., 1909.) 8°, 9 pp., 2 pls.

VAN GENNEP, ARNOLD. Les rites de passage. Étude systématique des rites. Paris: Librairie Critique, 1909. 12°, viii, 288 pp.

WREN, CHRISTOPHER. Turtle shell rattles and other implements from Indian graves at Athens, Pa. Reprinted from Proceedings and Collections, Wyoming Historical and Geological Society, Wilkes-Barré, 1908. 8°, 18 pp., 5 figs.

WUNDT, WILHELM. Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythus und Sitte. Zweiter Band, Mythus und Religion. Dritter Teil. Leipzig: Wilhelm Engelmann, 1909. 8°, xii, 792 pp.

FOREIGN NOTES

Maumbury Rings Circle

Mr H. St John Gray contributes to the *London Times* of December 26 a full account of excavations in the Maumbury Rings Circle, of which he was in charge. Of the work, *Nature* for December 31 says: "This has long been regarded as the site of a Roman amphitheater, and this view is corroborated by the fact that one of the most interesting discoveries made was that of a stratum of shell fragments, quartz, flint, land-shells, etc., similar to that used by the Romans in other places to fill up uneven patches, to prevent the slipping of the gladiators, and to absorb the blood of combatants. Fragments of pottery also indicate Roman occupancy, and one portion of the site seems to have been fortified, holes for stakes cut in slabs of Purbeck limestone having been found at the point where the entrance of the arena was situated. It is interesting to find that this place was occupied by the Neolithic people as a flint workshop. Flint flakes, cores, and hammer-stones were found scattered on part of the site, and the picks made of deers' antlers were obviously the implements by which this early race excavated the remarkable pit whence the rough flints were obtained. This pit is at least 30 feet deep, one of the deepest archeological excavations on record, one of those at Grime's Grave being a few feet deeper. It is much to be desired that a site which seems to have been almost continuously occupied since Neolithic times by various peoples should be fully investigated, and it may be hoped that the appeal for help issued by Mr Gray from Taunton Castle, Somerset, may be with a liberal response."

Imperial Bureau of Anthropology for the British Empire

The present status of the project to establish an Imperial Bureau of Anthropology for the British Empire is ably presented by Dr A. C. Haddon in *Nature* for March 18, as follows:

"For many years past those who have appreciated the practical value of ethnology in the administration of our Empire have realized the necessity of a central organization for the registration and coördination of data collected by Government officials or others, for the giving of advice to those about to reside or travel in India or the colonies, and to serve as a central office where those at home could obtain trustworthy information concern-

ing the various races and peoples that collectively constitute the British Empire. At the Liverpool meeting of the British Association in 1896, Mr C. H. Read, of the British Museum, proposed the foundation of a bureau of this nature. In his presidential address to the anthropological section at the Dover meeting, three years later, he announced that the trustees of the British Museum had undertaken the working of the bureau under his own supervision, if the Treasury would make a small yearly grant. Owing to lack of adequate support very little has been accomplished to render effective Mr Read's laudable endeavor.

"The need for such an establishment has been increasingly felt. Thanks to the zeal of Prof. W. Ridgeway of Cambridge, the president of the Royal Anthropological Institute, the matter has again been taken up. He drew up a memorial which has been signed by a large number of influential persons in all departments of activity, statesmen, eminent administrators of India and the colonies, members of Parliament, merchants, students of all branches of the humanities, anthropologists, and many others. The memorial refers to the utility of anthropology in other departments of intellectual and practical life; for example, several of our distinguished administrators, both in India and the colonies, have pointed out that most of the mistakes made by officials in dealing with natives are due to lack of training in the rudiments of ethnology, primitive sociology, and primitive religion. Nor is it only for the administrator that training in anthropology and facility for its further study are important. For purposes of commerce it is of vital necessity that the manufacturer and the trader should be familiar with the habits, customs, arts, and tastes of the natives of the country with which, or in which, they carry on their business. The Germans have long since seen the value of such a training; they have spent, and are spending, large sums annually in promoting the study of the ethnology of all parts of the world, and their remarkable success in trade in recent years, not only with primitive and barbaric races, but also in China and Japan, is largely due to this fact.

"The training of young officials is a matter of national importance, and there is evidence that some of our leading administrators are fully alive to its value. Recently, Sir Reginald Wingate addressed a letter to the Universities of Oxford and Cambridge in which he asked whether those universities were prepared to give instruction in ethnology and primitive religon to probationers for Sudan Civil Service; the Oxford Anthropological Committee and the Cambridge Board of Anthropological Studies at once replied in the affirmative, and courses of instruction in those subjects have already commenced. No provision has as yet been

made anywhere for the training of schoolmasters and medical officers in anthropometry, to fit them to take measurements of school children and Army recruits. Yet this branch of anthropology is one of highest importance, not simply for scientific reasons, but because of its practical bearing on the great question of physical deterioration, which has long engaged the attention of anthropologists and the medical profession, and has lately been discussed in Parliament.

"The memorial urges the establishment in London of a bureau in which all the distinguished anthropologists of the kingdom could meet on common ground, as do all the leading mathematicians, physicians, chemists, and biologists in the Royal Society. All the elements of such a bureau already exist in the Royal Anthropological Institute of Great Britain and Ireland. This bureau would collect information respecting the ethnology, institutions, arts, religion, and laws of all races, especially of those in the British Empire, and it would publish the notes sent in by observers in all parts of the world, issuing these in the form of bulletins. The bureau might confer a diploma on officials, scientific travellers, and others who had submitted to a proper test of their distinction in some branch of anthropology, and it would approve for certificates schoolmasters and others who had shown themselves competent to make anthropometrical observations in the examinations held under the direction of the bureau. In view of the services which such a bureau would render to the nation, 'we respectfully petition His Majesty's Government to make an annual grant of 500*l.* to the Royal Anthropological Institute for carrying out the scheme set forth, and also to grant a suitable set of rooms in the Imperial Institute.'

"It is not proposed that the teaching of ethnology should form part of the work of the bureau. For many years past instruction has been given in the Universities of Oxford and Cambridge in various departments of anthropology. In the University of London are the only two professors of sociology in the kingdom, and instruction has also been given in ethnology for several years, and the University of Liverpool has a professor of social anthropology. Thus, although most of the teaching appointments are financially starved and work under unfavorable conditions, the foundations have been laid for anthropological instruction in several of our universities.

"On March 12 the Prime Minister received an influential deputation at the House of Commons, which presented to him the memorial urging the Government to establish an Imperial Bureau of Anthropology in connection with the Royal Anthropological Institute. Professor Ridgeway

pointed out that the science of anthropology could be of the highest possible service to the State in the training of Colonial and Indian administrators, and that it was also a necessity for commercial success. Sir Edward Candy said, in reply to the Prime Minister, that he would make anthropology a compulsory subject.

"The Prime Minister said that he entirely agreed that anthropology was becoming every year more and more, not only an important, but an indispensable branch of knowledge, not merely for scholars, but for persons who were going to undertake the work of administration in an Empire like ours, whether in India or in Crown Colonies. While he would hesitate to express anything like a considered and final opinion as to whether anthropology ought to be included as a compulsory subject for examination, he was quite satisfied that it was highly desirable that it should become a regular subject of study, and enter into the normal equipment of young men who went to the outlying regions of the Empire and encountered strange conditions of life. He did not, however, hold out anything like an assurance, or even an expectation, that the pecuniary grant they had asked for would be accorded. Evidently he feared that other learned societies might also urge their claims for Government support, but he did not appear to realize that a grant for a bureau is on a different footing from one merely to a society as such. The need for a bureau of ethnology is urgent, and it should be remembered that to equip a bureau as an independent body would be much more expensive than affiliating it with a society which already possesses the nucleus of the requisite organization. It is to be hoped that the Chancellor of the Exchequer will be generous to this scheme, which is certainly one of national importance.

"An additional argument for the establishment of the bureau is to be found in the Sargent prize essay by the Rev. H. A. Junod, on 'The best means of preserving the traditions and customs of the various South African native races' (Report South African Association for the Advancement of Science, 1907 [1908], p. 142). The Rev. H. A. Junod is a sympathetic missionary who is well known for his studies on the ethnology of the Ba-ronga. In this essay he points out how the old lore is passing out of remembrance or becoming modified, and he adds, 'What is wanted is a central agency which would receive the materials collected by people on the spot and publish them in a way which would make them available for science at large. There ought to be created without delay a South African Anthropological Commission, which would answer to the need just pointed out.' It would be a credit to South Africa if the scheme

outlined by M. Junod could be carried out, and all such local enterprises should be affiliated with a central bureau in London."

Negroid Characters in Egypt

Mr Charles S. Myers finds (*Journal Anthropological Institute*, vol. xxxvii, Jan.–June, 1908, pp. 99–147) that the cause of the increase of negroid characters among the Moslems and Copts of Egypt as one proceeds from the Mediterranean toward the First cataract, is due to environment and not to race mixture. Mr Myers' extended investigations of the anthropology of Egypt show that the prevalent idea that Caucasian and negroid races have constituted the Egyptian population from the most ancient times to the present is unfounded. He says: "Our new anthropometric data favor the view which regards the Egyptians always as a homogeneous people who have varied now toward Caucasian, now toward negroid characters (according to environment), showing such close anthropometric affinity to Libyan, Arabian, and like neighboring peoples, showing such variability and possibly such power of absorption, that from the anthropometric standpoint no evidence is obtainable that the modern Egyptians have been appreciably affected by other than sporadic Sudanese admixture."

W. H.

Needle-case from Grinnell Land

After the publication of my paper on the Eskimo of Baffin land and Hudson bay (vol. xv, pt. 2, *Bulletin of the American Museum of Natural History*), I found, on looking over some of my old sketches, that a needle-case of the same type as that described on page 433 of the publication cited is in the collections of the British Museum. I am obliged to the courtesy of Mr Read for a drawing of the specimen, which is here reproduced. The object was found at Rawlings bay, on the west coast of the Smith Sound region, in a district now uninhabited. It will be observed that the specimen resembles most closely the two needle-cases represented in figure 234, *d* and *e*, of the publication cited. The general shape is almost identical with the specimen from Southampton island (fig. 234, *e*), from which, however, it differs in being ornamented with incised designs. The spur lines at the top and bottom differ from those of most of the other specimens in having the spurs placed in the same direction, not pointed toward one another. The type differs some-

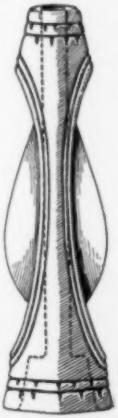

Fig. 16.—Bone needle-case from Rawlings bay, Smith Sound region. (½.)

what from the modern type of Smith sound, but I do not think that too much stress should be laid on this point, since some of the specimens from Southampton island show also a considerable variation in type which makes them in a way more similar to the Smith Sound specimens. The specimen here described shows that the distribution of this type of needle-case extended from the large islands of Hudson bay northward over Grinnell land to north Greenland.

FRANZ BOAS.

PERUVIAN MANUSCRIPT DISCOVERY

In a recent communication to the *Königliche Gesellschaft der Wissenschaften* in Göttingen, Doctor Richard Peitschmann announces the discovery, among the manuscript treasures of the Royal Library of Copenhagen, of a most valuable Peruvian picture manuscript of date 1587. It bears the mongrel Spanish title of *Nueva Corónica y Buen Gobierno*, numbers 1179 quarto pages, and deals chiefly with the history, religion, and social conditions of ancient Peru, particularly at the period of the conquest. It is written in a curious mixture of Kichua and jargon Spanish, and is the work of Don Felipe Guaman Poma de Ayala, a native of the highest imperial Inca stock. The numerous pictures indicate a remarkable development of native art. It is the intention of Doctor Peitschmann to make early publication of the entire manuscript, for which he has received the willing permission of the library authorities.

JAMES MOONEY.

ANTHROPOLOGIC MISCELLANEA

William Jones, well known among ethnologists through his researches among the Central Algonquian Indians, died on March 28, 1909, of wounds received in an attack by hostile natives of the Philippine islands. Dr Jones, by descent a member of the Fox tribe, was educated at Hampton Institute. Later he went to Andover, and then to Harvard University, where he received the degree of A.B. He continued his studies at Columbia University, where he held a fellowship and was later an assistant in

WILLIAM JONES

anthropology. He received the degree of Ph.D. from Columbia University in 1904. Although Dr Jones, in the course of his long residence in the East, had partially lost the practical knowledge of his native tongue,

he acquired it again in later years, and turned this knowledge and his intimacy with the members of his tribe to good account in carrying on his investigations. Under the joint auspices of the American Museum of Natural History and the Bureau of American Ethnology, he visited the Sauk and Fox tribe in Iowa and Oklahoma, and supplemented his researches by investigations among the Kickapoo. The excellent collections which he made on these journeys are now the property of the American Museum of Natural History in New York. The first part of the results of his studies has appeared, under the title *Fox Texts*, as Volume I of the Publications of the American Ethnological Society. This collection is the first considerable body of Algonquian lore published in accurate and reliable form in the native tongue, with translation rendering faithfully the style and the contents of the original. In form, and so far as philological accuracy is concerned, these texts are probably among the best North American texts that have ever been published.

Along with the preparation of the texts, Dr Jones made a detailed study of the grammar of the Fox dialect, part of which was published in the *American Anthropologist* (vol. 6, N. S., pp. 369–411), while a second part is to appear in the *Handbook of American Indian Languages*, which is being prepared under the auspices of the Bureau of American Ethnology.

Dr Jones had also completed a number of brief papers of eminent value to anthropologists on account of the clearness of his understanding of the thoughts and ideas of the Indians. His paper on "The Culture-Hero Tradition of the Sauk and Fox" (*Journal of American Folk-Lore*, vol. 14, 1901, pp. 225–239), and that on "The Concept of the Manitou" (ibid., vol. 18, 1905, pp. 183–190), are excellent contributions to our knowledge of the Central Algonquian.

After the completion of his field-work among the Sauk and Fox, Dr Jones was appointed research assistant in the Carnegie Institution, for the purpose of conducting investigations among the Central Algonquian. He spent two seasons of field-work among the Ojibwa Indians around Lake Superior, collecting a large amount of information on their folk-lore and customs. He acquired a thorough knowledge of the Ojibwa dialect, and was able to record a vast amount of material in the native tongue. Fortunately this material is so nearly completed that it will be possible to publish it, although not in that excellent form that Dr Jones would have been able to give it. This material will presumably remain our principal source of information on the Central Algonquian. The thorough grasp of the subject that Dr Jones had attained is indicated in his brief paper on "The Central Algonkin," contributed to the *Annual Archæological*

Report of Ontario, Canada, 1905 (pp. 136–146), and in his paper contributed to the International Congress of Americanists, 1906, on "Mortuary Observances and the Adoption Rites of the Algonkin Foxes of Iowa" (*Congrès International des Américanistes*, 1906, vol. I, pp. 263–277).

In 1907 Dr Jones was appointed by the Field Museum of Natural History in Chicago to conduct field-work in the Philippine islands. Two years he spent in researches in Luzon, which were crowned with marked success, until in the spring of this year he fell a victim to his devotion to science. In him we have lost a faithful and painstaking investigator, a man of great promise. His training for work in North America was such that nobody is ever likely to fill his place. In possession of a fund of knowledge, he was modest and averse to display. Persistent and courageous in carrying out the work to which he had once devoted his energies, he did not shrink from privations and danger. His uprightness, courage, and modesty commanded the respect and love of all who came into close contact with him.

FRANZ BOAS.

Archeology of the Everglades region, Florida. — While visiting the Seminole Indians of Florida in February, 1908, I had occasion to make a trip into the Everglades for the purpose of collecting ethnological material. During this journey and another one made later, opportunity was found to make a few archeological observations, which, although lacking accurate measurements and details, may prove of interest. The archeological as well as the ethnological specimens secured are now in the collection of Mr George G. Heye, of New York City.

Our first discovery was a series of refuse deposits, including a shell-mound, at the forks of New river a few miles west of Fort Lauderdale, on the north side of the stream. On the surface of these, and on the edges washed by the current of the river, were picked up numerous potsherds and a few fragmentary implements of shell. To the northward, at a distance of perhaps three hundred yards from the river, lay a group of mounds, six in number, forming a row nearly parallel to the course of the stream. The largest approximates some eight feet in height, with a diameter of fifty feet; the smallest, about two feet in height and eight feet in diameter. Low embankments were noticed extending from some of the larger mounds toward the river. There were also a number of small tumuli scattered about through the scrub palmetto. One of the larger mounds had been dug into by a previous explorer, who had discovered

one skeleton, at least, judging from the whitened fragments of human bone on the pile of sand thrown from his excavation; but our party trenched through another large mound (fig. 18), with negative results.

FIG. 18. — Mound and Excavators, Florida.

Continuing westward, we dragged our canoe through the shallow waters at the head of New river and entered the deeper winding channels of that vast watery prairie, the Everglades. The first night after leaving New river we reached the island known to the "Cracker" alligator-hunters as Long key — a narrow strip of land and trees in a sea of bog and saw-grass. Near its western end we found a refuse deposit roughly estimated at two hundred feet in diameter, in some places extending down below water level, here about three feet from the surface.

Not anticipating that we would do any excavation in the glades, we had left our shovels near the mounds, but we were able with improvised tools and one trowel to secure a small collection. Most abundant among the artifacts found were the potsherds, apparently in the main derived

from bowl-shaped vessels with incurved rims. The decoration, when present, consists in some cases of rude incised patterns, while occasional examples were found showing the checkered imprints of the carved paddle. A broken shell celt; worked marine univalve shells (*Busycon* sp. ?), some of them perhaps club-heads, others plummet-like; several small awl-like implements of bone, possibly projectile points, and an implement resembling a plummet, made of some soft stone, were also found.

FIG. 19. — Large mound near Hungerland, edge of Everglades, Florida.

Like the modern Seminole, the ancient people seem to have been large users of turtles, the shells and bones of which formed the greater part of the animal remains in the refuse heap; but the bones of various mammals, the alligator, and different kinds of birds and fish, were also secured. Marine and Everglades shells were abundant, but the bulk of the heap consisted of black earth with occasional layers of ashes.

On "Pumpkin Hammock," another island, some fifteen or twenty miles farther westward, we examined a similar deposit, which occupies

nearly the whole of the available dry land, with similar results. I have been told by the hunters that there are traces of ancient camps on most of the Everglades islands.

On another trip I found a mound built directly on the swampy plain of the Glades near "Barley" Barber's trading store at "Hungerland," about thirty miles west of Jupiter. On the dry land near by is a group of tumuli, including the largest I saw in Florida (fig. 19), which must be twelve or fifteen feet high. This, like some of those at Fort Lauderdale, is provided with a raised way running from the mound toward the water.

M. R. HARRINGTON.

The Scope and Content of Anthropology.— In the last number of the *American Anthropologist* Prof. R. B. Dixon has a review of my little book on the above subject, for which I am on the whole very grateful. Suffering as a classifier of books under the great variety of opinions still prevalent among anthropologists with regard to the nomenclature, boundaries, and even main subdivisions of the science, my chief aim was an attempt to outline a compromise that would have some chance of meeting with general acceptance, because founded, as shown in the appended bibliography, on the views of a number of well-known scientists, especially in Germany and France. And I was glad to learn that a professional American anthropologist had no serious objections to offer with regard to this part of the book, although in many respects conclusions are reached that are at variance with theories generally advocated on this side of the Atlantic.

But while my reviewer apparently is inclined to accept also the main features of the library classification offered, he finds serious fault with some of its details, and, although none can be less satisfied with many of these details than the author himself, I feel that some of the shortcomings mentioned are inevitable, owing to the incomplete state of the science itself, and ought not to be laid at the door of a poor librarian, who, after all, can only accept existing conditions.

The ideal classification of the literature of any science would no doubt be one in which provision was made for every conceivable subdivision large enough to be made the subject of a separate pamphlet, and in which the arrangement was entirely logical and in close touch with the one followed by an ideal text-book on the science. But as it is the nature of the ideal to be unattainable, it is only a truism to state that the ideal text-book never is forthcoming, and still less so the ideal classification, which latter, after all, primarily must be a practical system of pigeonholes for existing and prospective literature on each subject treated.

When, therefore, Professor Dixon severely blames me for my subdivision under systematic anthropology of the American race, I have of course to admit that the geographical scheme offered, instead of the requisite sub-races, is only an unsatisfactory makeshift and a failure. But so are, to my knowledge, to this day, the attempts made by anthropologists to establish such subdivisions, and it is not the business of the classifier of books to draw on his imagination in such cases.

Professor Dixon knows better than I that no such subdivisions, founded entirely on physical characteristics, have as yet been satisfactorily established, and it is a misunderstanding of my intentions to think that systematic anthropology, as here tentatively outlined, is meant to give any consideration whatever to linguistic or other purely ethnological features. It is true that the linguistic element, as regards the form of certain headings, could not well be avoided on account of the extant literature on the subject. But it seemed to me to be entirely out of the question to extend this inclusion to the some hundred linguistic stocks that have been preliminarily mapped out inside of the American race. Nor did it seem advisable to introduce the subdivision into Dolichocephalous, Mesaticephalous, and Brachycephalous tribes, as outlined by P. Topinard in his *Anthropology* and quoted by A. H. Keane in his *Ethnology*. The somatological literature dealing with the question does not fall in line that way. And the material, upon which this and other anatomical schemes are built, is, to my knowledge, too meager and quite inadequate for the purpose. If I am not mistaken, the scientists connected with the Bureau of American Ethnology even seem to despair of the possibility of establishing, on purely anatomical grounds, a racial chart like the one mapped out for Europe. I therefore humbly submit that the shortcomings of my taxonomic scheme are not entirely due to my "spending too little time in familiarizing myself with the more elementary principles of the science."

Turning to the objections made to the ethnographical subdivisions of the Indians, I would admit that the criticism is better founded. It would perhaps have been well to give a full list of the numerous linguistic stocks that have been established with some show of scientific certainty, but my own experience with the literature of the subject led me to believe that for the great majority of libraries in this and other countries the geographical subdivision was on the whole satisfactory, and the few stocks and tribes given under the North American Indians were in no way meant to be exhaustive or logically coördinated. The headings introduced are, on the whole, taken from Dr Brinton's *The American Race*. I had

found them useful in dealing with the literature in the Field Columbian Museum, and it will be observed that space is left in the notation for some thirty additional headings, which, added to the local subdivision by states, surely will suffice for most libraries.

With regard to the omission of Polynesia, it is of course an unfortunate oversight in reading the proof. I find in my original manuscript the heading, "Polynesia (except the Hawaiian Islands)." The reason for singling out the latter group, as well as New Zealand, is of course that the extant literature seems to make it convenient.

On the whole I venture to think that Professor Dixon's objections to these and, as hinted, other details not specified, are largely due to my failure to explain in the preface the general principles followed in my scheme of classification. While an attempt certainly was made not to violate the logical sequence of minor subdivisions also, and to avoid co-ordinating headings which are dissimilar as to extent or character, I never hesitated to make exceptions whenever the literature seemed to require it, as, for instance, in the case of the Hopi (3083) and of Hawaii (2661).

A library classification of any subject is, after all, primarily a convenient arrangement of its literature, and only in the second line a logical dissection of its contents. I have no doubt that mine has its shortcomings, even regarded from this point of view; but judging from the reviews in library journals, I have hopes that it may prove useful for quite a number of years, with such additions and omissions as each classifier will have ample freedom to make, owing to the flexibility of the notation.

JUUL DIESERUD.

Archeology in Nebraska. — The following letter, from Professor F. W. Putnam of the Peabody Museum, Harvard University, forwarding to the Editor of the *American Anthropologist* the accompanying communication from the Commercial Club of Omaha, is self-explanatory. We are glad to say that the latter communication reflects a very different spirit from that recently exhibited by a Nebraska Congressman in remarks in the House of Representatives, to the effect that the National Government is wasting time and money on ethnological and archeological investigations.

MARCH 19, 1909.

MR F. W. HODGE,
Editor of Anthropologist.

Dear Mr Hodge: I suppose you have received a copy of the enclosed circular letter, but if not it will interest you. It seems to me that the Commercial Club of Omaha has shown a high and liberal spirit which we can all

appreciate in contrast to the narrow spirit shown in some places in trying to prevent exploration by any one not a resident of the state.

Sincerely yours,

F. W. PUTNAM.

Omaha, March 16, 1909.

Curator, Department of Anthropology,
Peabody Museum, Cambridge, Mass.

Dear Sir:

The Omaha Commercial Club invites your department, when making up its field parties, to bear in mind the almost unexplored archeologic region of which this city is the geographical center. As is well known to you, the famous Nebraska Man was discovered a few miles north of Omaha in this county. The whole valley of the Missouri River is a veritable treasurehouse for the archeologist. There are unnumbered tumuli and hundreds of large circular house ruins scattered over the bluffs near the river which exploration shows differ materially from the type of dwelling used by the Omaha, Oto, and Pawnee Indians when Nebraska was visited by Lewis and Clark. Associated with these ruins are refuse heaps and tumuli. Several types of skeletal remains and many methods of interment indicate many different peoples, and in the matter of artifacts the range probably exceeds that of any other section. Besides the more common stone objects are the more interesting implements of bone, horn, antler, and shell, which include many new forms, while the variation of pottery is almost limitless.

Desiring in a thoroughly scientific spirit to encourage the study of Nebraska's earliest people, the Omaha Commercial Club takes this means of calling your attention to this splendid field in the geographical center of the United States.

Expeditions sent into this section will find convenient electric lines to convey them to their point of labor in a few minutes. The cost of living and transportation it will be shown on inquiry of the Omaha Commercial Club are nominal, and climatic conditions here are altogether desirable.

In extending this invitation, it can be stated that the Omaha Commercial Club has the hearty cooperation of Mr Robert F. Gilder of this city, with whose work as an archeologist you may be familiar and we trust you may look upon it with favor.

Respectfully yours,

THE COMMERCIAL CLUB OF OMAHA,

By W. R. WOOD,

Secretary.

We are glad to learn that, as a result of this appeal, Professor Henry Montgomery of the University of Toronto will join Mr Gilder in archeological research in the vicinity of Omaha during the coming summer.

Theodore-Jules-Ernest Hamy. — Perhaps the oldest professorship of anthropology at any seat of learning is that connected with the Paris

Museum of Natural History. It was originally a chair of anatomy, but the name was changed in 1850 to that of the natural history of man, or "anthropology" as it came to be called by Professor Serres who was the incumbent at the time. The latter was succeeded by de Quatrefages, and he in turn by the subject of this sketch, Professor E. T. Hamy, whose death occurred November 18, 1908.

Hamy was born at Boulogne-sur-Mer in 1842. He studied medicine in Paris, receiving his degree in 1868. The title of his thesis, "The Intermaxillary Bone in Man," already indicated that his bent of mind would

E. T. HAMY (1842–1908)

lead him eventually into paths more congenial, to him, than that of the practice of medicine. A trip to Egypt in 1869 brought him into contact again with a former acquaintance, Mariette, who turned Hamy's attention toward archeology. On his return Hamy became assistant to Broca in the latter's newly installed laboratory of anthropology, being charged with conferences on craniology and craniometry.

In 1872 Hamy was appointed assistant to Professor de Quatrefages, who had succeeded Serres in the professorship of anthropology at the Museum of Natural History. Two of his first published works appeared the same year: *Précis de Paléontologie humaine* and a memoir on the nasal spine. *Crania Ethnica*, in two quarto volumes, the joint work of de Quatrefages and Hamy, appeared in 1875–82. Hamy, in the meantime, had become interested in the anthropology of the New World, and published (1880) his *Recherches historiques et archéologiques*. This new field was destined to become one of the chief theaters of his subsequent activities, as the following list of publications will prove: *Decades Americanæ—Mémoires d'archéologie et d'ethnographie américaines* (1896–1899); *Lettres américaines d'Alexandre de Humboldt; Galérie américaine du Musée d'ethnographie du Trocadéro* (1897); and *Codex Telleriano-Remensis* (1899).

Professor Hamy was fortunate in his association with men of large mold, like Broca and de Quatrefages. He developed at a period when it was still possible for a man of industry and versatility to compass a very wide field. That he had such gifts to a marked degree is attested by the number and diversity of his achievements. His abilities as an organizer, director, and lecturer were of a high order, but his activities along these lines did not seem to lessen his productivity as author and contributor. The Bulletins of the Paris Society of Anthropology alone contain eighty-three communications from his pen. And yet he had time to preside over local societies and international congresses. At the time of his death he was still president of the *Société de Géographie de Paris* and of the *Société des Américanistes*. Of the latter he had been not only the founder, but also its only president. He founded also the *Bibliothèque ethnologique*, and, jointly with Cartailhac and Topinard, *L'Anthropologie*. Prior to the foundation of the latter journal he had been editor of the *Revue d'ethnographie*. These multifarious duties were not allowed to interfere with the routine of his lectures at the Museum as successor to de Quatrefages. It was in this capacity I first came to know him personally, and to appreciate, as so many others have done, his many-sided gifts.

Such in brief was the man whom many learned institutions, including the *Institut de France*, delighted to claim as their own, and whose death is mourned especially by anthropologists on both sides of the Atlantic.

GEORGE GRANT MACCURDY.

The New Serpent Mound in Ohio. — Mr Harlan I. Smith's confident denial of the genuineness of the "New Serpent Mound in Ohio,"

of which I gave an account in *Records of the Past* for September-October, 1908, should not be permitted to go unchallenged. In the first place, his own testimony is worthless, because he confesses that his "personal explorations were confined to that portion lying within the maple forest. . . . In fact," he says, "I did not even attempt to trace the other embankments." Against this I place the fact that Dr Metz did survey the whole mound, and his directions and distances are given in my article. Unfortunately the illustration given in the September-October number was not accurately drawn, but in the November-December number is

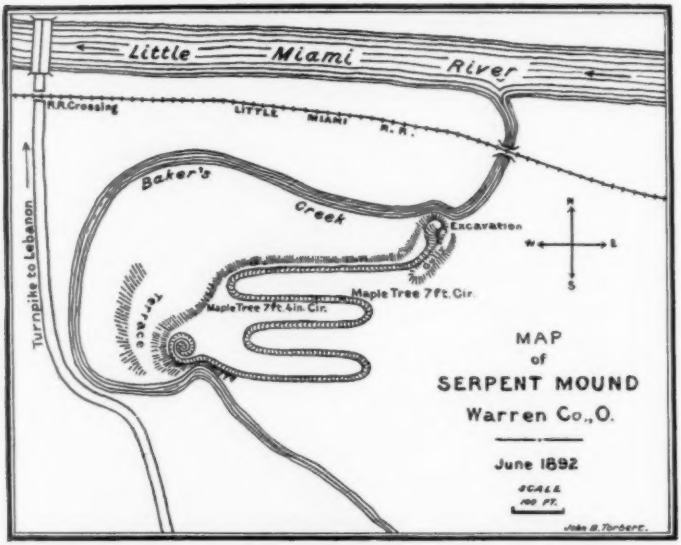

FIGURE 21.

given the drawing made by Dr Metz immediately after his measurements. The plan is here redrawn and reproduced (fig. 21).

As to the statement that "the most accurate published map of this site" is found in Charles Whittlesey's paper published in volume III of the *Smithsonian Contributions*, Mr Smith should have stated that Whittlesey did not pretend that this map was from an accurate survey. Whittlesey says: "The survey was made under circumstances that did not allow of a minute measurement of all parts of the work . . . Some of the

details are given from an eye sketch, and this obstructed occasionally by a snowstorm" (p. 8). Mr Smith adds that Whittlesey's survey distinctly shows "that the work is not a serpent mound"; whereas it simply shows that he did not, as he says, make any accurate survey at all.

To put such testimony as this against the detailed survey of such an authority as Dr Metz, and the testimony of eye-witnesses like Mr E. O. Randall and Dr Charles Hough, to say nothing of myself, is well-nigh unpardonable in one who is attempting to enlarge scientific knowledge. Perhaps, and probably, when Mr Smith was upon the ground, the portion of the serpent in the cleared field was covered with grass or with growing crops. But as he made no attempt to survey it, it was hardly proper for him to speak so confidently about that of which on his own confession he knew nothing, while if he had read carefully Colonel Whittlesey's report he would never have made Whittlesey's map the basis of a positive statement.

G. FREDERICK WRIGHT.

The Heye Collection. — As is well known to readers of this journal, Mr George G. Heye, of New York, has been forming, for several years, a collection of aboriginal American objects, with the result that he has brought together the largest and scientifically the most valuable series of ethnological and archeological objects ever assembled by an individual. As the collection has outgrown the facilities of a private establishment, and in order to make it more accessible to students, Mr Heye has deposited it in the Museum of the University of Pennsylvania, at Philadelphia, where it is now being installed by Mr George H. Pepper, formerly of the American Museum of Natural History, New York. Students of American ethnology and archeology generally, and the University of Pennsylvania in particular, are to be congratulated on thus being made the beneficiaries of Mr Heye's generosity.

McElmell Cañon. — It will be of interest to archeologists to know that the gorge in southwestern Colorado popularly known as "McElmo cañon," celebrated for its cliff-dwellings and other ancient Pueblo remains, should properly be called McElmell cañon, from Thomas A. McElmell, who settled there soon after the Civil War. This information is derived from Mr D. M. Riordan, of New York, long a resident of the Far West, and once agent for the Navaho Indians. The name became confused with that of the popular novel *Saint Elmo*, by Augusta Evans Wilson, recently deceased, which made its appearance in 1866, about the time Mr McElmell settled in the cañon that should bear his name.

THE fiftieth anniversary of the founding of the Paris Society of Anthropology will be celebrated July 7–9, 1909. Anthropological societies and institutions all over the world are invited to send delegates. The program includes a discourse by the Minister of Public Instruction and Fine Arts, an address by the president of the Society, a report by the general secretary on the scientific activities of the Society since its foundation, and messages from delegates who are to be the guests of the Society at a luncheon and a dinner.

THE Legislature of New Mexico has recently passed a bill establishing the Museum of New Mexico, which is placed under the control of the Archeological Institute of America, with a subsidy of five thousand dollars per annum. The old Palace at Santa Fé has been granted for the use of the Museum and of the School of American Archeology recently founded by the Archeological Institute.

THE title of honorary keeper of the Ashmolean Museum, Oxford, has been conferred upon Dr Arthur Evans "in consideration of his eminent services to the university as keeper of the Ashmolean Museum, extending over twenty-five years." The thanks of the University were also given to Dr Evans for his recent gift to the museum, as previously announced in these pages.

THE fifth session of the Congrès Préhistorique de France will be held at Beauvais (Oise), July 26–31. Dr Th. Baudon is president and Dr Marcel Baudouin secretary of the committee of organization. Communications may be addressed to M. Louis Giraux, treasurer, Avenue Victor-Hugo, 9bis, Saint-Mandé (Seine).

THE Wahlburg gold medal of the Swedish Society for Anthropology and Geography has been awarded to Dr Sven Hedin. This is the second presentation of the medal, it having been given previously to Professor G. Retzius.

DR A. L. KROEBER, of the University of California, Prof. M. H. Saville, of Columbia University, and Drs A. M. Tozzer and W. C. Farabee, of Harvard University, have been elected members of the American Antiquarian Society.

THE twenty-first session of the Congrès Archéologique et Historique de Liège (Belgium) will be held from July 31 to August 5. The presidents of the Congress are J. Fraipont and G. Kurth; the secretaries, J. Brassinne and L. Renard-Grenson.

THE University of Nebraska has published *A Guide to the Courses in Social Anthropology*, prepared by Professor Hutton Webster. It is gratifying to note how rapidly the need of a course in anthropology is being felt even by the less prominent universities of the country.

THE managers of the department of archeology of the University of Pennsylvania have awarded the Lucy Wharton Drexel medal, for important work in exploration and publication, to Professor Rudolph E. Brunnow, for his work in Assyria and in the exploration of Arabia.

MR ECKLEY BRINTON COXE, JR., founder of the Coxe Archeological Expedition from the University of Pennsylvania, and Dr George B. Gordon, curator of the museum, have sailed for Egypt to join members of the expedition who are working in Nubia.

LORENZO G. YATES, author of various papers on the archeology of the Pacific coast, died at his home in Santa Barbara, California, January 30.

DR GEORGE GRANT MACCURDY, of Yale University, gave a lecture before the Buffalo Society of Natural Sciences on February 26th, his subject being "The Ancient Art of Chiriqui."

PROFESSOR KARL PEARSON gave, in January, before the Royal Institution of Great Britain, two lectures on "Albinism in Man."

American Anthropological Association

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1909

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MR C. C. WILLOUGHBY,*
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DECEASED MEMBERS

PAUL EDMOND BECKWITH,* 1907.
GUSTAV BRÜHL,* 1903.
ALFREDO CHAVERO, 1906.
M. A. CLANCY,* 1902.
WILLIAM E. DODGE,* 1903.
GEORGE J. ENGLEMANN,* 1903.
WESTON FLINT,* 1906.
DANIEL GARCIA, 1907.
JOHN WALTER HASTINGS, 1908.
JOHN H. HINTON,* 1905.
RICHARD HODGSON,* 1905.
WILLIAM JONES, 1909.
WALTER S. LOGAN,* 1906.
OTIS TUFTON MASON,* 1908.
WASHINGTON MATTHEWS,* 1905.
WILLIAM WELLS NEWELL, 1907.
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EDW. PLEASANTS VALENTINE, 1908.
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